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New Members of the Profession

We publish, in this issue, the names of 186 young men and women who, having just graduated, have been admitted to membership of the Royal College of Veterinary Surgeons. Thus, for them, the long period of study is over, and their professional lives begin. They will divide themselves, no doubt, among the several branches of the profession, though it may be hoped, in view of the continuing shortage of assistants, that a goodly proportion will opt for private practice. They will enter that sector of the profession equipped with a range of scientific knowledge of which their forbears hardly dreamed, and upon terms which compare by no means unfavourably (if the classified advertisement columns of this journal are anything to go by) with those of the new entrants to most other learned professions. But even without regard to material consideration there is still much in private practice that provides rewards not to be won in other fields of endeavour.

At a time when—whether for good or ill—there is more regimentation and more uniformity than has been known in this country for generations, the satisfactions of personal independence, and of relying upon one's own effort for advancement and professional esteem go far to counterbalance the liabilities so familiar to all those who actively practice veterinary surgery. Nor is the knowledge of services rendered to the community, and of skill employed in the relief of suffering, without its deep satisfaction, idealistic though such satisfaction may be.

There are those among the new graduates who will seek appointments on the staffs of research institutes and increase the as yet insufficient numbers of the profession's scientists. Veterinary research enjoys peculiar advantages by reason of the comparative ease with which it can examine group or herd problems, and the facilities for experiment upon the various species denied to the doctor of human medicine. Within recent years medical and veterinary fields have tended to converge in a number of directions, but it may be suggested that the maximum degree of common study is of equal value to both, and every encouragement should be given to it.

To speak of the students who have just graduated brings immediately to mind those who have taught them. It is not so long ago that veterinary schools became first established within universities whose curricula had not formerly included our science. The whole profession owes a debt to those of its members who, having been appointed to the academic staffs of such universities, have so acquitted themselves as to make what was an historic innovation an unqualified success.

Among the new members of the Royal College this year are 11 Asian veterinary surgeons. They return as pioneers, in large measure, to their countries, and we wish them well in approaching the great problems that lie before them. There can be no question that the increases called for in the world's agriculture, if steadily increasing populations are to be fed, pose a challenge to the veterinary surgeon, especially in Asia. He, above all, as a past-President of this Association said of the profession generally, must be " in the main-stream of endeavour and not upon its banks." The vast size of the countries involved, the intricacies of religious conviction and of social custom, the lack of skilled personnel, and the menace of endemic disease on a continent-wide scale, these are enough to daunt the stoutest heart.

Among the names printed on another page are a number having a welcome familiarity. Their fathers, and often their grandfathers before them, have served or continue to serve the profession. They, perhaps even better than their contemporaries, know the tradition it has now become their privilege to help in upholding. They will make their contribution as time goes by; and it will be a worthy one.

A Histological Study of a Transmissible Pneumonia of Pigs Characterised by Extensive Lymphoid Hyperplasia

BY

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GULRAJANI & Beveridge (1951) described an infectious pneumonia of pigs distinct from swine influenza, although having similar macroscopic lesions. The cause was postulated to be a virus, and Betts (1952) named the disease " Virus Pneumonia of Pigs (V.P.P.)." The histopathology of this disease has not been reported in detail, although it has been referred to briefly by Jarrett (1954).

The objects of this paper are to describe the histological changes noted in the lungs of 13 pigs infected by intratracheal injection with a suspension of lung tissue containing the " M.R." strain (Betts, 1953) of the infective agent of " V.P.P.", and to follow the sequence of histological changes in the lungs of pigs killed from one day after infection onwards. A description is also given of the histopathology of the disease as seen in 17 pigs involved in a natural outbreak. The relationship of the histological picture to the macroscopic lesions described by Betts (1952) as " typical of V.P.P." is also discussed.

Materials and Methods

In the course of this study, lungs from 39 naturally or experimentally infected pigs and 59 control animals were examined, as listed in Table I.

Natural cases

These animals were involved in an outbreak of pneumonia at the Compton pig farm in 1954, and were killed at pork weight. The disease was clinically similar to " V.P.P." as described by Betts (1952), but evidence that the animals were in fact infected with the " V.P.P. virus " is presumptive, as no method of identifying this infection other than by clinical signs and macroscopic lesions has yet been described. Histologically, however, the disease was identical with that produced by experimental inoculation of the " M.R." strain of " V.P.P."

Experimental cases

Inoculations with the " M.R." strain of " V.P.P. virus " were carried out by Dr. A. O. Betts, Department of Animal Pathology, Cambridge, in connection with experiments that have been reported by Betts, Whittlestone, Beveridge, Taylor & Campbell (1955). Some of these pigs were maintained at Compton and at the time of their slaughter the opportunity was taken of making a histological examination of their lungs. In Table I these animals are referred to as late experimental cases. In order to produce early experimental cases, Professor W. I. B. Beveridge kindly supplied three samples of pig lung likely to be infected with the " M.R." strain. Unfortunately, these failed to set up the disease. A fresh strain of what was presumed to be the same infective agent was therefore obtained from a local bacon factory. The method adopted was to examine histologically frozen sections of a number of lungs with macroscopic lesions indistinguishable from those associated with " V.P.P.", and to select for inoculation lung tissue that showed the extensive lymphoid hyperplasia characteristic of the disease produced by the " M.R." strain. Twenty ml. of the supernatant of a 1/10 unfiltered suspension in M/15 phosphate buffer saline, *p*H 7.17 centrifuged at 2,500 r.p.m. for 10 minutes, of this material were inoculated intratracheally into each animal under intraperitoneal nembutal anaesthesia. The inoculation was made with the animal on its back and the head slightly higher than the tail.

Bacteriological examination of lungs

The only lungs examined bacteriologically were the nine early experimental cases. No growth was obtained from these cases after aerobic incubation for three days at 37° C. on Bactotryptose ox-blood agar.

Tissue examined histologically

Five to 11 blocks of tissue were taken from the apical, cardiac, diaphragmatic, and intermediate lobes of each set of lungs. In all, 429 blocks were examined from pneumonic lungs, and 295 blocks from normal lungs.

Histological methods

Tissues were placed in 10 per cent. formol-saline within three hours of death. Blocks were cleared in benzene and embedded in paraffin. Staining was with haematoxylin and eosin in all cases, and occasionally also with Giemsa or Gram.

Results

(a) Examination of the lungs from 17 natural cases.

Macroscopic appearance. The macroscopic appearance of these lungs was that described by Betts (1952) as " typical of V.P.P.", namely, the lesions were " usually plum coloured but sometimes they are greyish and have the appearance of lymphoid tissue. The pneumonic areas are clearly demarcated from the normal lung tissue and are level with or below it." One of these cases with consolidation of the tips of both apical and both cardiac lobes is shown in Fig. 1. Fibrosis, mentioned by Betts as occurring in long-standing lesions and sometimes causing distortion, was not noted in any of these animals.

Microscopic appearance. The outstanding histological abnormality was extensive lymphoid hyperplasia, but consideration of all sections from this series of animals indicated a gradation of changes beginning as an increase in cellularity of the interalveolar tissue with slight oedema and a few large mononuclear cells free in the alveolar spaces (Fig. 2);

TABLE I

Group	Number of pigs	Time of slaughter	Number of blocks of tissue examined	Remarks
Pneumonia characterised histologically by extensive lymphoid hyperplasia				
(*a*) Natural cases	17	Pork weight	187	All from Compton pig farm : an outbreak of disease in 1954 clinically resembling " V.P.P."
(*b*) Early experimental cases ...	9	2 at 1 day after inoculation 2 at 4 days " " 1 at 7 days " " 1 at 11 days " " 1 at 18 days " " 2 at 33 days " "	99	Inoculated intratracheally at 8–10 weeks of age with unfiltered lung from a bacon factory case showing lymphoid hyperplasia pneumonia
(*c*) Late experimental cases ...	13	Bacon weight : 104 to 175 days after inoculation	143	Inoculated intratracheally at 8–10 weeks of age with unfiltered lung containing the " M.R." strain of " V.P.P."
Control material				
(*a*) Macroscopically normal non-inoculated lungs	35	Pork or bacon weight ...	175	—
(*b*) Macroscopically normal lungs inoculated with normal lung	24	2 to 60 days after inoculation ...	120	Intratracheal inoculation

intensifying as an increase in the cellular exudate, more obvious oedema, and frank lymphoid hyperplasia often related to bronchi and bronchioles (Fig. 3); and culminating in obliteration of considerable areas of alveolar tissue by dense accumulations of lymphocytes related more or less closely to bronchi and bronchioles (Fig. 4). Neutrophils were scarce in all sections. There was a considerable amount of cellular debris in the bronchioles and bronchi in some sections, and there was some " roughening " of the bronchiolar epithelium that might amount to bronchiolitis. In areas showing extensive lymphoid hyperplasia, however, bronchial and bronchiolar exudate was slight or absent. Constriction of the lumen of bronchioles, and sometimes even of bronchi, was often very marked (Fig. 4).

This series of changes could be traced in many sections, but it was also evident that lymphoid hyperplasia could also occur in the absence of alveolar involvement. Many areas were noted where there was an increase in the number of lymphocytes in the interalveolar tissue, more especially in the immediate vicinity of blood vessels and bronchioles (Fig. 5). It seems possible that this histological picture was the result of an extension of intense lymphoid hyperplasia —such as that depicted in Fig. 4—along the bronchiolar and vascular ramifications within the septal tissue.

Collapse of lobular tissue without an associated inflammatory reaction (Fig. 6) was frequently noted, usually involving one or two lobules in a section and often adjacent to an emphysematous area. The collapsed tissue usually had the rather characteristic " folded " appearance shown in this figure. Fig. 7 shows a bronchus containing cellular debris, but with the epithelium apparently intact; true bronchitis did not appear to be a feature of the disease. No consistent abnormality or increased activity of the glands in the bronchial wall was noted. There was no marked abnormality of the pleura, although slight cellular infiltration seen in some sections indicated minor involvement in some cases.

(b) Examination of the lungs of 13 experimentally infected pigs killed at bacon weight

Macroscopic appearance. The requirements of the feeding experiment in which these pigs were included made it necessary that they be slaughtered at about the same weight (200 lb.). The interval between inoculation and slaughter varied in individual cases from 104 to 175 days. Extensive macroscopic lesions of the kind shown in Fig. 1 occurred in seven animals. In the other six animals macroscopic abnormalities were less obvious and consisted of small areas of greyish consolidation with some thickening of the interlobular tissue that caused distortion of the lobes (mainly apical and cardiac), as noted by Betts (1952) in long-standing cases of " V.P.P."

Microscopic appearance. In the macroscopically consolidated areas the histological changes were precisely those already described. However, in those cases in which macroscopic abnormalities were less definite, and especially when there was distortion of the lobes and thickening of the septa, lymphoid hyperplasia was far less intense, even ill defined, and the histological picture was of resolution (Figs. 8 and 9). Large mononuclear cells and lymphocytes with densely-staining nuclei were numerous in the alveolar walls and alveolar spaces, and a rather

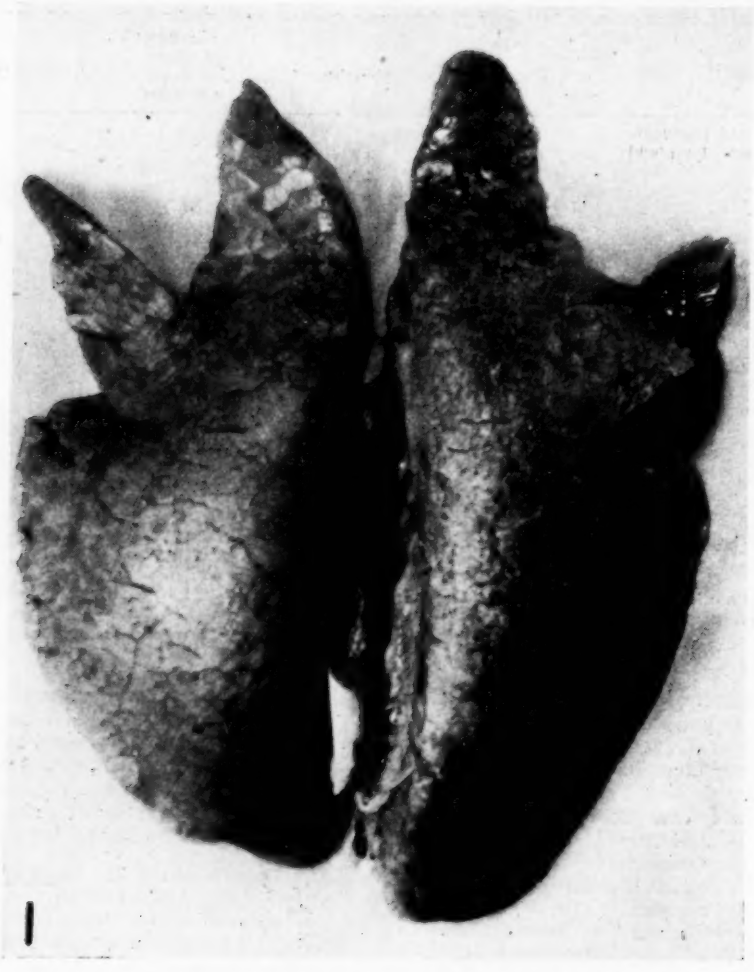


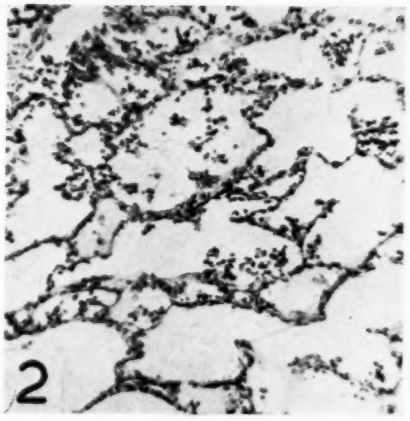
FIG. 1.—Field case showing greyish-pink consolidation of both apical and both cardiac lobes.

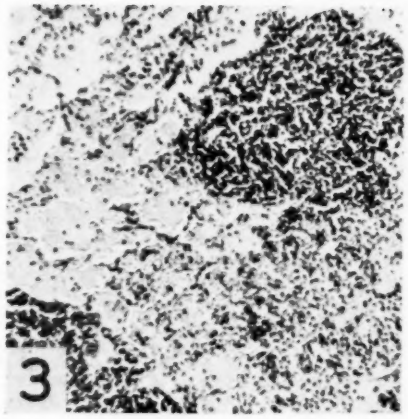
noticeable feature was that these cells, singly or in small groups, were frequently adherent to the alveolar walls giving the whole area a rather "ragged" appearance. Areas of resolution were found in those lobes (apical, cardiac and intermediate) most likely to show macroscopic consolidation at the height of the disease, and it seems logical to postulate that even the most extensive macroscopic abnormalities can disappear during the healing process. It appeared, however, that macroscopic abnormalities in the form of thickening of the interlobular septa and distortion of one or more lobes could remain after histological resolution was apparently complete. Differential staining of sections from a macroscopically distorted lobe in one animal indicated that thickening of the septa was due to an increase in both elastic and fibrous tissue elements.

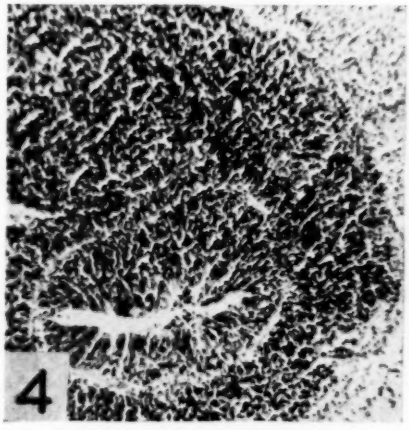
(c) Examination of the lungs of nine experimentally infected pigs killed at times varying from 24 hours to 33 days after inoculation

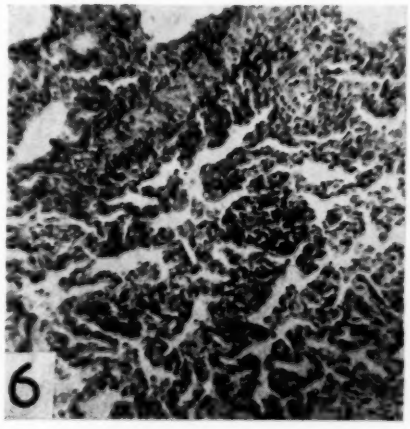
Macroscopic appearance

24 hours	2 pigs	no abnormality detected.
4 days	2 pigs	no abnormality detected.
7 days	1 pig	no abnormality detected.
11 days	1 pig	greyish-pink consolidated areas at the tips of the right and left apical lobes and over about one third of the left cardiac lobe.
18 days	1 pig	One small, greyish consolidated area in the left cardiac lobe.
33 days	2 pigs	(a) Consolidation of the whole of the right apical and left cardiac lobes and a small consolidated patch on the anterior border of the left diaphragmatic lobe. (b) One small, consolidated patch on the anterior border of the left diaphragmatic lobe.









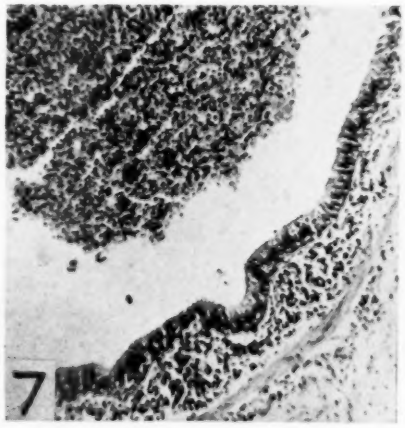


FIG. 2.—Field case: slight oedema: small numbers of lymphocytes and large mononuclear cells in the alveoli.

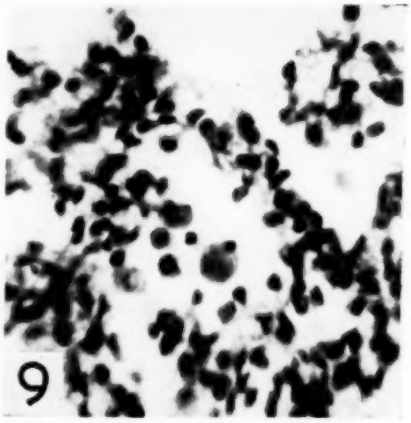
FIG. 3.—Field case: intensification of the lesion shown in Fig. 2, with obvious lymphoid hyperplasia.

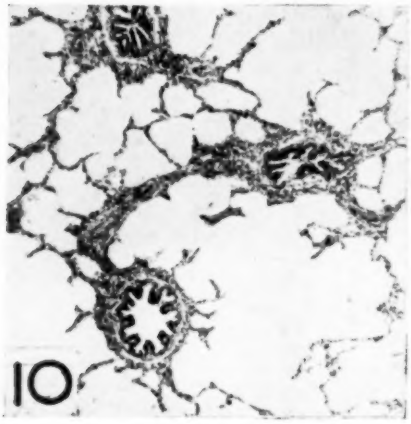
FIG. 4.—Field case: dense cuff of lymphocytes causing marked compression of the lumen of a bronchiole.

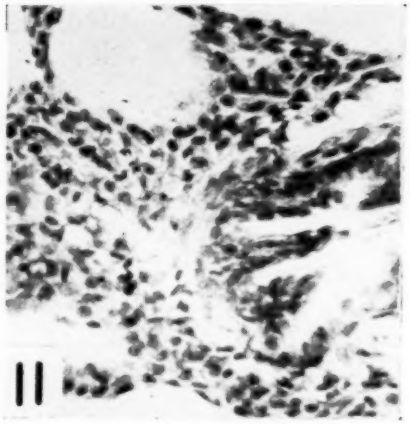
FIG. 5.—Field case: peribronchiolar and perivascular lymphocytic cuffing.

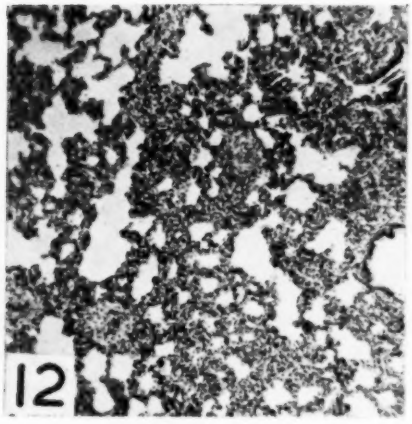
FIG. 6.—Field case: lobular collapse in an area showing the degree of macroscopic abnormality depicted in Fig. 1.

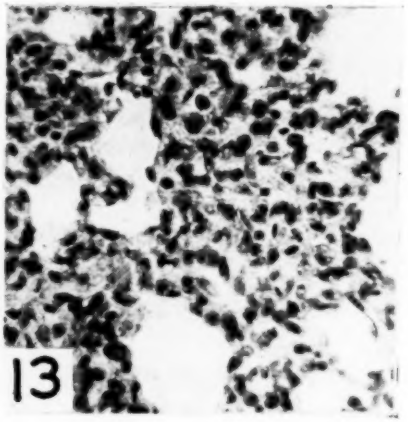
FIG. 7.—Field case: a bronchus containing cellular debris, but the epithelium appears normal.











FIGS. 8 and 9.—Experimental case: resolution. The arrow in Fig. 8 indicates the area shown in Fig. 9.

FIGS. 10, 11, 12 and 13.—Experimental cases killed within four days of inoculation: low and high power appearance of non-specific changes attributable to the volume of intratracheal inoculum rather than to a disease-producing agent.

Thus, macroscopic evidence of pneumonia was confined to the animals killed on or after the 11th day after inoculation.

Microscopic appearance. An interesting abnormality was noted in the lungs of the two animals killed 24 hours after inoculation and in the two killed at four days. This consisted of (*a*) slight, but definite, accumulations of lymphocytes round many bronchioles (Figs. 10 and 11) and (*b*) accumulation of lymphocytes and small macrophages in the interalveolar tissue (Figs. 12 and 13). The latter change was generalised throughout the lung, being as obvious in the caudal regions of the diaphragmatic lobes as in the anterior portions of the apical lobes. Neutrophils were extremely rare, and there was no bronchiolar or bronchial exudate. However, these abnormalities were also found in the lungs of pigs killed two and four days after inoculation of a suspension of normal lung, and they must therefore be regarded as non-specific and as associated with the considerable volume (20 ml.) of material injected intratracheally.

In the pig killed at seven days there was clear peribronchiolar and perivascular lymphocytic cuffing. Increased cellularity of the interalveolar tissue was still obvious, and rare mitotic figures were noted among these cells. Neutrophils were rare, and there was a very slight exudate in some bronchioles. These changes were generalised throughout the lungs. No similar degree of lymphocytic cuffing was found in any normal lung, nor in any lung inoculated with a suspension of normal lung, and it can therefore be accepted as the earliest detected change attributable to the infective agent.

At 11 days the changes attributable to disease were definite. There was macroscopic consolidation (see above), and in these consolidated areas there was collapse of lobules with a considerable cell reaction of lymphocyte and small macrophage type. Occasional large free cells of septal type were also found, the vast majority with a single nucleus but very rarely with a double nucleus. The bronchiolar epithelium had a hyperplastic appearance. Cellular exudate containing neutrophils, besides small round cells, was present in some bronchioles. Neutrophils were scarce, however, in the collapsed tissue.

Pathological changes in the animal killed at 18 days were slight and amounted only to lymphocytic cuffing of some bronchioles. The degree of reaction to inoculation in this case was apparently minimal.

At 33 days the histological picture was virtually that already described in field cases of the disease, with two important exceptions (*a*) the epithelium of many bronchioles had a clearly hyperplastic appearance, and (*b*) the changes were generalised throughout the lung and were not confined to the macroscopically abnormal areas, although these areas showed the greatest degree of lobular collapse.

(d) Examination of 35 normal lungs and 24 lungs inoculated with a suspension of normal lung

Apart from the abnormalities described above in animals killed up to four days after inoculation of a suspension of normal lung, no significant histological abnormality was detected.

Summary of the histopathology of the disease

Stages in the histopathological progress of the disease may be itemised thus:—

1. Peribronchiolar and perivascular lymphocytic infiltration, definite at seven days.

2. Lymphocytic infiltrations more marked. Collapse of localised areas of lung tissue, with a cell reaction consisting of lymphocytes and macrophages. Neutrophils rare. Bronchiolar epithelium hyperplastic. Cellular exudate in some bronchioles. Abnormalities detectable throughout the lung. Seen at 11 days and 33 days after experimental inoculation, so probably lasts for some time.

3. Marked lymphoid hyperplasia. Only patchy involvement of the alveoli. Bronchiolar epithelium usually almost normal. Some exudate, but this mostly in the bronchi. These changes often confined to apical, cardiac and intermediate lobes, with the great mass of lung tisue normal. The type of change seen several weeks after infection.

4. Resolution, that in some cases can be virtually complete.

Betts, Whittlestone, Beveridge, Taylor & Campbell (1955) commented on the lack of correlation between the growth-rate of individual pigs from groups infected with the " M.R." strain of " virus pneumonia virus " and the extent of macroscopic pneumonic lesions at slaughter. The explanation may be that histologically the disease is generalised throughout the lungs in its early stages, although this is not evident macroscopically.

Discussion

The recognition by Gulrajani & Beveridge (1951) of a transmissible pneumonia of pigs differing from swine influenza has been followed in recent years by numerous papers concerning a disease that has come to be called " virus pneumonia (V.P.P.) " It has been assumed that greyish-pink consolidation, notably of the apical, cardiac and intermediate lobes, of the lungs is pathognomonic of the condition. Particular attention was paid to this point during the course of this work, and it was found that although this macroscopic change is associated with the lymphoid hyperplasia pneumonia, it also occurs in other pneumonias that show an entirely different histological picture. In addition to the cases described in this paper, histological examination was made of 37 lungs from a variety of sources showing macroscopic lesions indistinguishable from " V.P.P." The variations in the histological pictures in these lungs were so marked that it appeared certain that other aetiological agents must be involved. It is hoped to describe some of these pneumonias in a later paper. It is concluded, therefore, that some feature additional to the macroscopic appearance is required to establish a positive diagnosis of " V.P.P."

It seems likely that the pneumonia described in this paper, and produced by the " M.R." strain of " V.P.P.", is a pathological entity, but it has yet to be proved that this type of pneumonia is produced only by this infective agent. However, since the diagnosis of " V.P.P." is based at present on clinical signs and the macroscopic appearance of the

lungs, it would seem, as a result of this work, that histological examination is an important aid to diagnosis.

Grey lung disease of mice as described by Niven (1950) presents in its later stages histological features that are similar to those of the pneumonia described here. Niven made her observations on mice killed at known intervals after experimental infection with the grey lung virus, and she recorded an immediate polymorphonuclear leucocyte reaction that had, as a rule, disappeared within two weeks after inoculation. No similar neutrophilic reaction was noted in pigs killed within two weeks of inoculation in these experiments.

Jarrett (1954) has discussed the histological similarity between atypical pneumonia of calves and certain pneumonias in other animals. When his findings are related to those described in this paper, the conclusion is reached that pneumonia characterised histologically by extensive lymphoid hyperplasia occurs in various species of animals. The relationship between the aetiological agents of lymphoid hyperplasia pneumonia in calves and in pigs has yet to be determined.

Summary

A constant histological picture was found in pigs inoculated intratracheally with the " M.R." strain of " V.P.P." and in pigs involved in a natural outbreak of a disease clinically similar to " V.P.P."

The outstanding abnormality was extensive lymphoid hyperplasia of predominantly peribronchial, peribronchiolar, and perivascular distribution. The histological course of the disease was followed from one day after experimental inoculation onwards.

Although pneumonia characterised by lymphoid hyperplasia was clearly associated with " V.P.P." it has yet to be determined whether the infective agent of " V.P.P." is the only cause of this type of lesion.

Examination of pig lungs from various sources, all with the naked-eye lesions regarded as typical of " V.P.P.", showed so wide a variation in the histological picture that it was concluded that other causes of these lesions must exist. In these circumstances it was felt that a histological examination offers a more specific method of diagnosing " V.P.P." than the naked-eye examination of the lungs.

Acknowledgments.—I am most grateful to Dr. W. S. Gordon, C.B.E., for his interest in this work and his encouragement. My thanks are also due to Mr. F. H. Summerfield, A.R.P.S., of this laboratory for preparing the photographs, and to Mr. P. F. Dennis for technical assistance.

References

BETTS, A. O. (1952). *Vet. Rec.* **64.** 283.

———. (1953). " Virus Pneumonia of Pigs and Related Conditions." Thesis, Cambridge.

———, WHITTLESTONE, P., BEVERIDGE, W. I. B., TAYLOR, J. H., & CAMPBELL, R. C. (1955). *Vet. Rec.* **67.** 661.

GULRAJANI, T. S., & BEVERIDGE, W. I. B. (1951). *J. comp. Path.* **61.** 118.

JARRETT, W. F. H. (1954). *J. Path. Bact.* **67.** 441.

NIVEN, JANET S. F. (1950). *Brit. J. exp. Path.* **31.** 759.

Tonsillectomy in the Dog*

BY

R. A. ROPER

Ewell

THE whole aspect of tonsillectomy has interested me for some years. We all know how emphatic some members of our profession have been about the adverse effect that unhealthy tonsils have upon the dog, and I think we must be all agreed that the disease is a common problem. A year or two ago I tried to keep some statistical records in my practice. Unfortunately, I did not find time to continue with them, but, in connexion with to-night's talk, I did find that there was a high incidence of tonsillitis *per se* and also a high incidence of patients being treated for other, apparently disconnected, illnesses who had enlarged tonsils.

I would like to say, quite definitely, that I do not consider this operation need be a particularly common one. In fact, the majority of cases of tonsillitis or other diseases associated with tonsillitis can be cleared up with medicinal treatment, and there are very few instances in which I would recommend tonsillectomy until antibiotics, sera or vaccines had been tried—and the general health of the patients attended to by correction of faults in their feeding and management.

However, in view of the advice the bacteriologists give us that it is very difficult to eliminate streptococci permanently from the dog and the difficulty the body has to develop an effective and permanent antibody reaction, then it is not surprising that a number of these cases become chronic or are subject to frequent relapses. I do not wish to infer that streptococci are the sole bacterial factor involved, no doubt other organisms have an influence, but there is no disputing the fact that streptococci have a special affinity for the tonsil.

Conditions requiring Tonsillectomy

There are, to my mind, three types of condition which may present suitable reasons for advising tonsillectomy.

Firstly, there is the dog which has recurrent illnesses with mild pyrexia and shivering turns, inappetence, a retching cough, halitosis, occasional emesis and a generally lifeless attitude. The tonsils are enlarged and inflamed and even between attacks rarely return to complete normality.

Secondly, there is the patient with an allergic type of dermatitis. Here I feel I am treading on very thin ice. The condition associated with B.H.S. infection has been well described before. For this short paper I would suggest that any diffuse skin irritation, with slight scurfiness without signs of any specific loss of hair and with occasional papula eruptions on almost any part of the body, should be considered, provided always that the tonsils are themselves enlarged and inflamed. Partial or temporary response to a streptococcal vaccine may help

* Paper presented to the Central Veterinary Society on February 2nd, 1956.

in diagnosis; also any evidence the owner may offer of a throat-clearing cough and frequent swallowing movement or intermittent halitosis.

Thirdly, there is catarrh of the external auditory canal which I associate in particular with the Poodle and the Airedale. This is that very chronic form in which the ear is very much reddened and there is a scanty, chocolate-coloured secretion. Examination with an auroscope reveals the auditory canal to be thickened, slightly macerated-looking, and ulcerated. In several cases I have found the tonsils to be enlarged and inflamed and, on questioning the owner, a history of an occasional slight cough is often described.

One other condition that is sometimes met on its own is the recurrent interdigital cyst. I have not had an opportunity of operating on a patient with this type of illness but I feel it is another possible indication.

There are one or two other points to consider. I do not advise removal of tonsils from young dogs. Numerous puppies in apparently normal health have a so-called soft hypertrophy of the tonsillar lymphatic tissue and it will often be found that this corrects itself as maturity is reached. I remember examining for insurance a puppy with very enlarged tonsils that was clinically in perfect health. It was most difficult to decide how to word the certificate.

If any of these conditions are met, and after prolonged treatment are still a source of trouble, then I think the operation of tonsillectomy is indicated. At worst you have removed two unhealthy pieces of lymphatic tissue and possibly you have cured an obstinate and troublesome illness.

Anaesthesia

Having decided to operate there is first of all the choice of anaesthesia. My personal preference is for a combination of intravenous thiambutane* at the rate of 2 mg. per lb. bodyweight, followed 20 minutes later by intravenous pentobarbitone sodium given very slowly until full anaesthesia is reached—this approximates to 1/10 gr. per lb. bodyweight. This technique has these advantages; once given there is no further bother with the anaesthetic; breathing is steady and firm; anaesthesia lasts sufficiently long after the operation for clotting to occur before any retching reflexes are likely to develop; the dog may be left after the operation for some time in a head-back position so as to avoid danger of aspirating blood; if delayed haemorrhage should occur there is a chance of controlling it with swabs without administering further anaesthetic.

Once anaesthetised, the dog is placed on its back with a rolled towel under the neck and then a tape tied behind the upper canines is used to tie the dog's nose firmly against the edge of the table. The legs are now strapped to hold the dog steady. If the nose is firmly held and the towel properly adjusted under the neck, the hard palate will form a trough leading away from the pharynx and the tonsils. Another tape is tied behind the lower canines and the tongue pulled well forward. The tape is tied fairly firmly over the tongue whose tip is now doubled round the lower jaw. The tape is finally tied over the tip of the tongue to hold it in place. If this tape is now pulled it opens the lower jaw wide and pulls the body of the tongue well clear of the pharynx exposing the tonsils very effectively. It is advisable for an assistant to hold this tape although I have fixed it to the table with reasonable success.

* Themalon, Burroughs Wellcome.

The Operation

I use the following instruments for the operation:—

Head mirror
Thermo-Cautery
1 pr. Mayo's scissors
1 pr. McIndoe's dissecting forceps
1 pr. Gillie's dissecting forceps
4 pr. Mosquito forceps
2 pr. Allis tissue forceps
1 per cent. solution of adrenalin
sterile swabs
fine suture silk for ligating arteries.

The tonsils are seen on either side of the pharynx going backwards and slightly upwards. I find that I need to sit on a low stool about 15 inches high at an ordinary surgery table. It is considerably less tiring than bending over to get in the right position. A head-mirror is most necessary to illuminate the tonsils. McIndoe's and Gillie's forceps are finely balanced, long and tapering (excellent for spaying operations) and the latter has one in two rat teeth. The thermo-cautery is adjusted until the blade is just red—it wants to sear as well as cut.

The operation from now on will be described as I see it and not necessarily with reference to normal nomenclature.

I pick up the right-hand tonsil with McIndoe's forceps and clip the medial fold of the tonsil crypt with a pair of mosquito forceps which are then used to keep the fold to one side. A pair of Allis forceps are clamped on to the tonsil with great care as the congested lymphatic tissue is so fragile that the gland is liable to disintegrate. By lifting the tonsil carefully out of its crypt two bands of tissue are seen attaching the tonsil at each end—the anterior and posterior pillars. The latter, which is further away, must be incised first and care is taken that only the mucous membrane is severed. If the cut is too deep it is likely to cause haemorrhage as the most troublesome blood vessel seems to lie towards the posterior pillar. Next, the nearer anterior pillar is incised in the same way. Adrenalin swabs keep the bleeding well under control. The Allis forceps are now used to pull the tonsil further out of the crypt to expose the lateral and upper aspect of the capsule. This is now incised to join the cuts made in the pillars at each end. The tonsil is now well clear of the crypt and the cautery is used to slowly cut through the submucous tissue and to sever finally the median aspect of the capsule. This latter often bears pedicles of lymphatic tissue and it is most important to thoroughly explore the crypt and remove as many of these remnants as is possible.

(Concluded at foot of col. 1 overleaf)

Torsion of the Bovine Abomasum

BY

R. RICHARDSON

Chesterfield

Introduction

In THE VETERINARY RECORD of October 24th, 1953, there appeared an abstract of a paper by P. Bischoff (*Proc. Part* 1. *Int. Vet. Congr., Stockholm*) of an operation performed by him for torsion of the bovine abomasum.

Some time after reading this article I had the opportunity of seeing a case in which the diagnosis was obscure, but having read the above paper I felt justified in diagnosing torsion of the bovine abomasum. Laparotomy confirmed the diagnosis, and I felt that as such an operation had not been described before in this country, and since the details available in the abstract quoted were very sketchy, it was worth while recording it.

Subject.—A three-year-old attested Freisian heifer.

Past History.—The heifer calved on January 21st, 1955. Two weeks later she developed acetonaemia, which proved very resistant to treatment. She responded finally after two weeks' intensive therapy, during which time she lost a lot of weight. The animal was then eating well and giving two gallons of milk (February 21st, 1955).

Tonsillectomy in the Dog.—*Concluded.*

If the cautery has been correctly adjusted there is rarely more than a trickle of blood and this is controlled by an adrenalin swab placed in the crypt and covered by the median fold which is now released by the mosquito forceps. On only one occasion did I encounter a spurting artery which I ligated with 3/0 silk. I think, in humans, ligatures are found to fall off and be swallowed within a few days. I do not attempt to suture the mucous membrane together.

A similar technique is used for the other tonsil. After its removal a swab is placed in the crypt and with the swab in the other crypt it is removed about 20 minutes later.

If cautery is not available the dissection may be carried out with scissors used in the slightly opened position to tear the tissues rather than cut them. Similarly I find that the sharp-set teeth of dissecting forceps may be used.

Post-operative Treatment

Post-operative treatment consists of leaving the patient in the same position as long as possible. I give a long-acting penicillin injection and 1 per cent. solution of oxalic and malonic acids as a blood coagulant. I rarely meet post-anaesthetic excitement with this technique, and if care is taken when operating there should be no post-operative haemorrhage.

Most of the patients are relatively normal in 24 to 48 hours, and are soon barking and eating freely.

Onset of Present Illness

On February 26th, 1955, I was called in again to see this animal because she had suddenly lost her appetite, and was giving no milk whatsoever. There was a history of feeding mangolds, some of which were frosted.

February 26th.—Examination revealed the following:—

Intermittent colic, thirst, complete anorexia, scanty faeces, dullness, and no milk yield. Temperature was 101.4° F. and pulse rate 75 per minute. Palpation and auscultation revealed a completely toneless rumen. No undue pain was evident on pinching down the back or on forceful palpation of the abdomen.

A diagnosis of ruminal indigestion was made, and a stomachic given.

February 27th.—Examination revealed the following:—

Temperature 101.8° F.; pulse rate 95 per minute. Clinical signs were similar to those of the previous day, but dullness had increased, and there had been no further defaecation.

Atony of the rumen was still complete and she had given no milk.

In addition the following signs were now evident:—

(1) On auscultation of the right flank region, a peculiar " tinkling " sound was heard over the lower two-thirds, extending forward to the middle of the last two or three ribs.

(2) Normal borborygmi were absent.

(3) Forceful ballottement of the right flank produced the sound of slapping water.

(4) On examination the rectum was found to be completely devoid of faeces, and the rumen could only be palpated with difficulty. A large, tense viscus was encountered to the right of the mid-line, approximately just beyond and on the level with the brim of the pelvis. This viscus was found on rectal examination, in conjunction with external ballottement from the right flank, to be about 10 inches in diameter, and full of fluid.

(5) When the examining arm was withdrawn from the rectum, the animal strained unsuccessfully to defaecate.

Having recently read the abstract quoted above, I felt certain that I was dealing with a case of torsion of the abomasum, and suggested to the farmer that laparotomy was the treatment of choice. He agreed, and laparotomy was performed on February 28th, 1955.

The Operation

Anaesthetic.—Infiltration of " Xylotox " in a T-shaped area commencing 1 inch below the lumbar transverse processes in the left sub-lumbar fossa, extending 9 inches in a ventral direction and equidistant from the iliac crest and the last rib.

Incision.—A 9-inch vertical incision was made in the anaesthetised site.

Findings.—The rumen was flaccid and collapsed, and a slight granular peritonitis was present over its

surface. The diagnosis was confirmed on palpation of the abomasum which was tense, grossly distended with fluid and gas. It was lying to the right of the mid-line, extending backward from the xiphoid region (along the floor of the abdomen, and adjacent to the ventral sac of the rumen), to the level of the brim of the pelvis. It had rotated anti-clockwise through 180°.

A large bore intravenous needle attached to a length of rubber tubing was inserted into the abomasum in order to drain off the fluid and gas by gravity. Drainage was extremely slow but was necessary, owing to the weight of the fluid, before the viscus could be manipulated. When sufficient fluid had been drained off, two hands were inserted and the abomasum lifted and rotated into its normal position. Immediately this was accomplished, tone was felt to return to the muscles of the abomasum. The peritoneum and internal muscles were then closed by continuous suture, using No. 3 20-day chromic catgut. The external oblique muscle and skin were closed using interrupted eversion sutures.

Post-operative Treatment

On each of the following five days, 2,000,000 I.U. of penicillin were given intramuscularly. On removal of the skin sutures on the seventh day the temperature had risen to 104.2° F., and there was a distinct tenderness on palpation of the abdomen. A diagnosis of diffuse peritonitis was made which was treated by intramuscular injection of 2,000,000 I.U. of crystalline penicillin daily for a further five days.

An immediate improvement in the animal's condition was noticed even as early as the day following the operation. She made an uninterrupted recovery, and a month after the operation was giving 4 gallons of milk daily.

Conclusion

After this operation it seemed obvious to me that there must have been other cows suffering from torsion of the abomasum which have been lost due to ignorance of the existence of such a condition. I feel that veterinary surgeons owe a debt of gratitude to the authors of the original article for pioneering a new approach to the diagnosis and treatment of "ruminal indigestion."

Acknowledgments.—(1) To P. Bischoff, who first described the condition, and to THE VETERINARY RECORD for publishing the abstract, without which I should probably never have diagnosed the condition.

(2) To Mr. D. M. MacDonald, M.R.C.V.S., without whose able assistance the operation could not have been successfully performed.

QUESTIONNAIRES FOR CLINICAL INFORMATION

May we remind those honorary secretaries of Divisions who have not yet applied for them, that our Questionnaires for clinical information are available? The use of these by members in practice helps materially in the preparation of clinical notes.

A Note on Bovine Diphtheroid Stomatitis in the Nakuru District of Kenya and its Successful Treatment with Chloramphenicol*

BY

R. B. SHERIFF

Nakuru, Kenya

Introduction

THE threefold losses arising from this condition caused by *Fusiformis necrophorous* warrant its inclusion amongst the diseases of major economic importance in the Nakuru District of Kenya. This District is by far the most intensively developed dairying area in the Colony and the quality of stock is of a very high standard. All the usual dairy breeds are represented, and are grade or pedigree on the female side, bred to pedigree imported bulls. Grazing conditions are good and on most farms consist of the naturally occurring grasses *Pennisetum clandestinum* and *Cynodon dactylon*, and of planted leys of *Chloris gayana*.

Clinical Observations

Diphtheroid stomatitis usually occurs in an enzootic form, especially on large dairy farms where milking and calf rearing are carried out on the movable bale system. Due to the fact that it has to be carted long distances, there is usually an acute shortage of water at the milking points on such farms, and as a result the standard of hygiene often leaves a lot to be desired. Purely from a clinical point of view, however, it seems that poor hygiene alone is not the only factor concerned in the occurrence of this condition, for it occurs not infrequently in pedigree herds where the management and general husbandry could only be described as ideal.

Clinical manifestations, which are severe, develop surprisingly quickly and are usually first noticed on the tongue and less frequently on the cheeks and fauces. The appearance of secondary pulmonary and intestinal symptoms is almost immediate, and in untreated cases death often ensues in 36 to 48 hours which is considerably more rapid than has been reported from other countries.

Whilst young animals are unquestionably more susceptible, there is no definite age limit and in virulent outbreaks adult stock may be just as badly affected; the picture then very closely resembling that of rinderpest.

Losses occurring as deaths in the acute initial stage by no means represent the most serious aspect of the disease and it is in the form of delayed mortality and morbidity that it takes its heaviest toll. In animals which have been severely affected extensive secondary abdominal or thoracic lesions are common, in some cases actually causing death. In others they are responsible for chronic ill health, and by lowering the animal's resistance render the patient more susceptible

* "Chloromycetin," Parke, Davis & Co., Ltd., London.

(*Concluded at foot of col. 1 overleaf*)

Artificially-induced Lactation in Ewes

BY

L. J. LAMBOURNE

Ruakura Animal Research Station, Department of Agriculture, Hamilton, New Zealand

IN a recent communication to this journal, McPherson (1955) reported considerable success in inducing lactation in barren ewes with stilboestrol, and concluded that a single subcutaneous injection of 30 to 40 mg. followed by a week of hand-milking and supervised sucking by strong lambs could be relied upon to bring Blackface ewes into adequate lactation.

A small-scale confirmatory experiment was carried out at Ruakura during the normal lambing season in September, 1955, to test whether adult Romney ewes of proven milking capacity could be brought quickly and easily into lactation by a single stilboestrol injection. McPherson's ewes were producing after seven days more milk than the lambs could drink, but in the present trial milk production was recorded for a fortnight after injection.

Methods

Empty ewes were available from a flock of five- and six-year-olds bought from a hill farm in March, 1955, and tupped at Ruakura. Thirteen ewes were selected for this trial. They were in similar good body condition, about 110 to 120 lb. live-weight, sound in the udder so far as could be determined by careful examination, and were known not to have conceived in 1955. They were run on good spring grass before and during the trial.

Stilboestrol dipropionate in oil,* 10 m.g. per ml., was given subcutaneously on the side of the brisket.

TABLE I—STILBOESTROL TREATMENTS

Group	1	2	3	4	5	6
Initial dose (mg.)	5	10	20	40	40	80
Second dose, after 14 days	—	—	—	—	40	—
Ewe No.	23	99	16	129	76	39
	110	149	177	208	132	114
				N.T.		

Ewes in Groups 1, 2, 3 and 6 were turned out after 14 days. The five ewes of Groups 4 and 5 constituted for the first 14 days a repetition of McPherson's treatment. In the second 14 days, Group 4 was kept in milk as a control for Group 5.

Udders and teats were massaged twice daily after injection and all initial secretion was collected and recorded, morning and night. Several strong orphan lambs were available for mothering and were allowed to suck the ewes from about the fifth day after injection to provide a natural stimulus and to initiate, it was hoped, the psychic sequence leading to adoption. At convenient intervals the ewes were hand-milked, or the lambs were test-weighed before and after sucking, for a 24-hour period to determine what level of milk production had been attained, and notes were made of the appearance of the milk and of the degree of development of the udder.

Results

Physical Changes

All ewes showed pronounced udder development within 48 hours of injection, and growth continued in some cases throughout the fortnight. The vulva often became noticeably turgid and reddish in colour within 24 to 48 hours. Though the ewes were running in a paddock adjacent to one containing rams, no overt oestrous behaviour was observed.

Milk Production

The results for each ewe are shown in Fig. 1. It should be noted that mature Romney ewes normally yield 2 to 4 lb. of milk daily within two or three days of parturition.

Milk Composition

The initial secretion from most ewes was watery,

* May & Baker.

A Note on Bovine Diphtheroid Stomatitis, etc.—*Concluded.*

to intercurrent infections especially anaplasmosis and babesiosis. Surviving animals extensively affected with internal necrotic foci never thrive well and, on slaughter, are either condemned or are disposed of as lowest grade meat.

Treatment

Of the various treatments investigated over the past 10 years, prior to the use of chloramphenicol, the best results have undoubtedly attended the use of triple sulphonamides supported by heavy dosage of penicillin, and locally by the application of various antiseptics to the mouth lesions. The recovery rate, however, was low and those animals which recovered only did so after prolonged treatment.

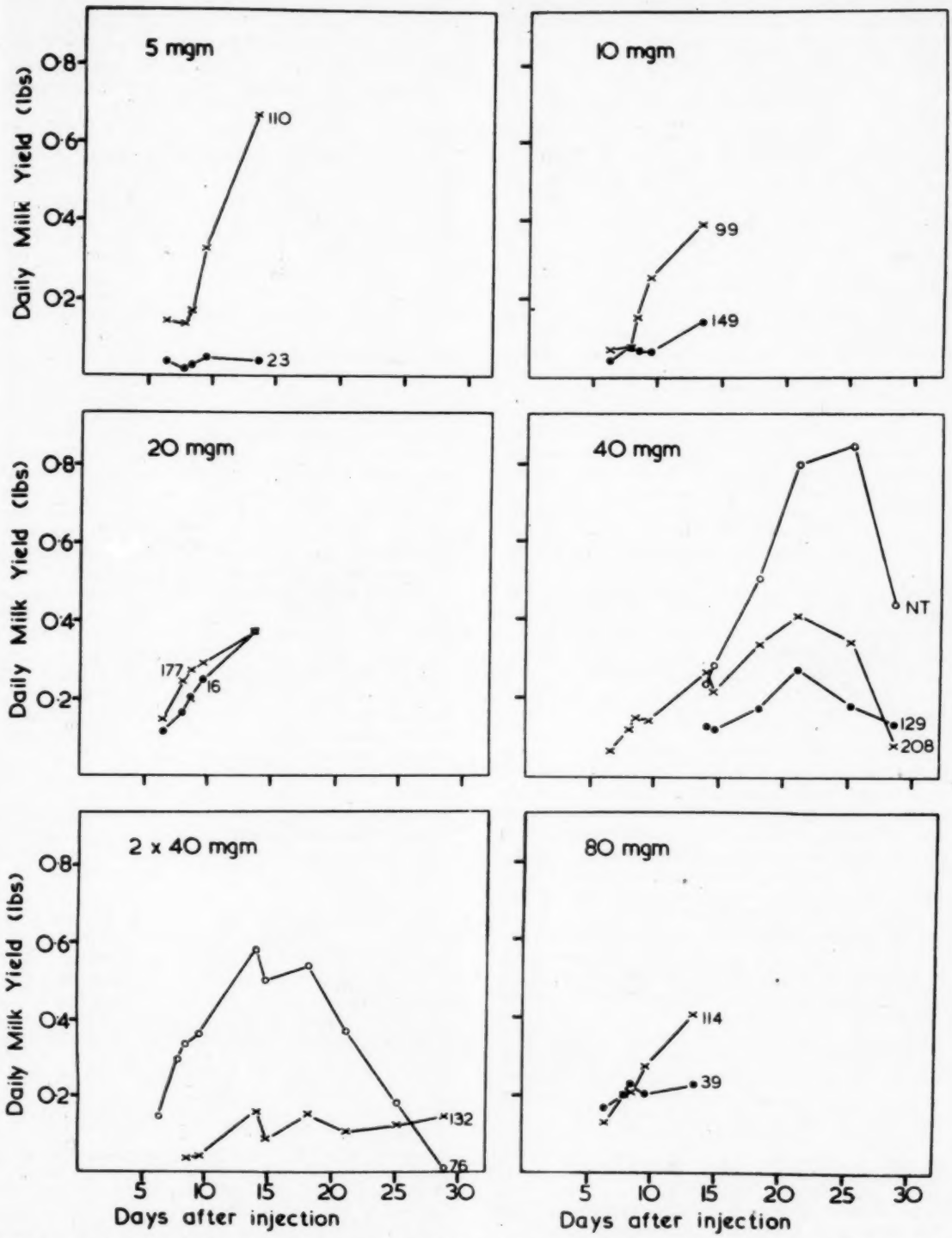
Chloramphenicol has been used intramuscularly at the rate of 2 mg. per lb. bodyweight once daily. In addition, mouth lesions are thoroughly curetted, dried and dressed daily with chloramphenicol.* The results of this treatment have been quite spectacular and a complete cure is usually achieved over a period of two to three days. As a result of the quick recovery very little condition is lost and the danger of secondary internal lesions is reduced to a minimum.

Summary

A brief account of bovine diphtheroid stomatitis in the Nakuru District of Kenya is given, together with a highly successful treatment.

Acknowledgment.—My thanks are due to Messrs. Parke, Davis & Co., Ltd., who kindly supplied the chloramphenicol for trial.

* "Chloromycetin 10 per cent. tincture," Parke, Davis & Co., Ltd.



Milk yields of stilboestrol treated ewes. About half the points shown for each ewe were obtained by hand-milking, and the rest by test-weighing the lambs to .01 lb. before and after sucking, two or three times in 24 hours.

but changed to thick colostral material in most cases within three or four days. By five to seven days after injection most ewes were giving milk of normal consistency but somewhat yellow in colour. By 12 to 14 days this yellowish appearance had gone.

Ewe 76 gave normal-looking milk from the 7th until the 25th day then reverted to a thick colostral fluid in very small quantity, and ewe 129 gave thick colostrum-like secretion for 12 days. No chemical analyses were undertaken. The lambs drank from all ewes with evident relish.

Mothering

Most of the ewes showed no interest in the lambs at any stage, whether the lambs were run in the paddock with them or given access to them after 8 to 12 hours' separation. Only ewe N.T. (no ear tag) would suckle her lamb without physical restraint, and she would do so only if someone stood near-by.

Discussion

The great individual differences in milk yield at all dose rates, shown in Fig. 1, make rather uncertain the interpretation of any but the gross features of the results. The main conclusion to be drawn is that none of the ewes had attained, even in 14 days, more than a quarter or a third of the production reached by normal ewes shortly after lambing.

Explanations cannot at present be given for the great differences between ewes, nor for the apparent decline in milk production of some ewes after a fortnight.

Many reports show that artificial induction of lactation is not a rapid process. Thus Peeters & Massart (1947) who implanted stilboestrol tablets in virgin ewes, found production rose steadily to about 300 to 400 ml. (*i.e.* ¾ to 1 lb.) daily, 30 to 60 days after treatment.

The results of Folley & Malpress (1944, 1944a), Folley, Stewart & Young (1944) and Hammond & Day (1944) from implantation and oral administration of oestrogens, and of Parkes & Glover (1944) from the subcutaneous injection of various esters of stilboestrol in cattle, all agreed in showing that the induced lactation was slow in developing and maximum yields were not commonly found until as long as one to five months after first treatment.

Even when preliminary oestrogen therapy extended over quite long periods, as in the experiment of Hancock *et al* (1954), the results showed individual variability comparable with that reported in this paper.

The present demonstration that a single stilboestrol injection led to the slow attainment of only mediocre levels of lactation, regardless of the amount administered, is therefore not surprising, but it is evident that further investigation is needed before a single subcutaneous stilboestrol injection can be recommended with confidence for the induction of worthwhile lactation in Romney ewes.

Acknowledgments:—Most of the work involved in the handling of the animals was done by Mr. J. P. Muller and Miss H. McLean to whom the writer is indebted for their care and patience.

Current Literature

ABSTRACTS

Swine Enteritis. I. Terramycin in the Treatment of Diarrhoea of Suckling Pigs. SCHIPPER, A., BUCHANAN, M. L., & EVELETH, D. F. (1956). *J. Am. Vet. Med. Assn.* **128.** 2. 92-3.

A severe diarrhoea of undetermined aetiology affects piglets within 24 hours of birth. Faeces are coloured grey to yellow, and contain mucus with gas. The piglets become dehydrated, weak, and refuse to obtain nourishment from within one hour of the onset of the symptoms. Environmental conditions, the sows, and the milk, are all normal. The affected pigs may die if not treated, although some untreated pigs recover but remain unthrifty and bad doers.

Therapeutic measures of control included the injection of anti-erysipelas or anti-hog-cholera serum, or both together, with no good results, nor have penicillin or streptomycin proved to be of value in these cases. Oxytetracycline (terramycin) and chlortetracycline (aureomycin) were given orally in 100 mg. capsules to baby pigs weighing 2 to 5 lb. Three or more such treatments at 12-hourly intervals were required to produce good results. As this method is time and labour consuming, the sows were then injected with 2 g. terramycin each, in the ham muscles. It was thought that a high-level injection would result in the excretion of the antibiotic in the sow's milk. The pigs improved and scouring stopped in 12 hours. Later it was found that a dose of 1 g. would be sufficient to give therapeutic levels in the milk. In all cases the terramycin for a given dose was dissolved in 20 ml. of distilled water. Oral administration of terramycin to the sows was of no use, nor were injections of penicillin or streptomycin. *Post-mortem* examination of the piglets showed lesions of a severe gastro-enteritis.

D. J. A.

Resistance of Calf Scour-Producing Organisms to Broad Spectrum Antibiotics. BARR, F. S., CARMAN, P. E., & CLARKSON, T. B. (1955). *Amer. J. Vet. Res.* **16.** 61. 515.

The authors examined five organisms, one strain of *Pseudomonas aeruginosa*, three strains of *Escherichia coli* and an unidentified *Salmonella* for their *in vitro* sensitivity to the tetracyclines, neomycin and polymixin B. The organisms had been recovered from animals affected with calf scour and which had previously been treated for other diseases with "broad spectrum" antibiotics. Details of such treat-

References

FOLLEY, S. J., & MALPRESS, F. H. (1944). *J. Endocrin.* **4.** 1.
———, & ———. (1944a). *Ibid.* **4.** 23.
———, STEWART, D. L., & YOUNG, F. G. (1944). *Ibid.* **4.** 43.
HAMMOND, J., Jnr., & DAY, F. T. (1944). *Ibid.* **4.** 53.
HANCOCK, J. J., BRUMBY, P. J., & TURNER, C. W. (1954). *N.Z. J. Sci. Tech. A.* **36.** 111.
MCPHERSON, E. A. (1955). *Vet. Rec.* **67.** 200.
PARKES, A. S., & GLOVER, R. E. (1944). *J. Endocrin.* **4.** 90.
PEETERS, G., & MASSART, L. (1947). *Ibid.* **5.** 166.

ment or the antibiotics employed are not given. Each organism was insensitive to chlortetracycline, oxytetracycline, and tetracycline, while they were moderately sensitive to neomycin and sensitive to polymixin B. It is interesting to note that a combination of neomycin and polymixin B. appeared to be synergistic, inhibiting the growth of these organisms *in vitro* at a concentration of up to 1.5 μg./ml. The work circumstantially confirms the existence of a cross-resistance pattern within the tetracycline group of antibiotics, and the authors conclude that the bactericidal effect of polymixin and neomycin as opposed to the bacteriostatic effect of the tetracyclines precludes the induction of bacterial resistance to the former group of antibiotics.

Abstractor's note.—This view might not be supported by others who have reported the induction of bacterial resistance in the presence of bacteriostatic concentrations of other antibiotics. J. H. T.

The Nitrate Hazard in Freshly Lifted Mangolds. L. B. O'MOORE. (1955). *Irish Vet. J.* **9**. 292.

After accidentally consuming freshly lifted mangolds cows showed a syndrome similar to that of milk-fever. Calcium therapy was without effect. Intravenous methylene blue (50 ml. of 4 per cent. solution) was beneficial. It is suggested that the syndrome was the result of methaemoglobin formed from ingesting the large amount of nitrate (2·5 per cent.) in fresh mangold. Storage allows the conversion of nitrate into protein. The methaemoglobin would be reduced to haemoglobin by methylene blue. F. A.

The Movement of Radio-opaque Material in the Bovine Uterine Tract. L. E. ROWSON. (1955). *Brit. vet. J.* **111**. 334–42.

The motility of the uterine tract was investigated in 17 maiden heifers. About 2 ml. of thin radio-opaque oil were introduced into the body of the uterus by means of an inseminating pipette using normal artificial insemination technique. The animals were slaughtered after varying time intervals. After clamping the uterine horns to prevent further movement of the oil, the tracts were examined radiographically to display the disposition of the oil.

In animals in oestrus the oil reached the tip of the uterine horn in five minutes but required a further 30 to 35 minutes to penetrate the Fallopian tube. The fimbria is reached about 75 minutes after deposition of the oil. If oxytocin was injected (30 units pitocin) i.m. at the time of deposition then the radio-opaque oil penetrated about one-third of the length of the Fallopian tube in two minutes. Bovine semen did not enhance the rate of penetration of the oil. The oil did not pass from the anterior vagina into the body of the uterus.

In the non-oestrus period radio-opaque material did not pass to the Fallopian tube even when oxytocin was injected. It is suggested that the corpus luteum depresses the activity of the uterine tract and prevents the action of oxytocin. The responses during the luteal phase, however, were less definite and consequently were more difficult to interpret. At oestrus the tract is very responsive to oxytocin.

F. R. B.

Intravenous Urography in the Dog. COLLERY, L. (1955). *Irish Vet. J.* **9** (6). 142–5.

The author states that he has taken X-rays of 10 healthy dogs using diaginol intravenously. Two dogs showed no gross abnormality on autopsy and four were alive and healthy at the time of writing. One bitch weighing 23 lb. received 105 ml. of the contrast medium over 12 weeks and showed no toxicity. During the course of his work the author found that a general anaesthetic was necessary, and that 10 ml. of 50 per cent. diaginol were satisfactory in a 35-lb. bitch.

Exposures three to eight minutes after injection gave the best visualisation of the calyces of the kidneys and ureters. In contrast to other workers it was found that both left and right sets of organs were represented whenever visualisation was obtained at all. Successful plates were not obtained in dogs weighing more than 35 lb. R. C. F.

Preliminary Studies on a Living Virus Dust Vaccine for Distemper. GORHAM, J. R., FARRELL, R. K., & OTT, R. L. (1955). *Cornell Vet.* **45**. 326–30.

Experiments were carried out in ferrets and mink to determine the efficacy of a living avianised distemper vaccine administered as an aerosol. The vaccine was prepared by suspending chorio-allantoic membranes from developing chick embryos, infected with distemper virus, in dried skim milk, lyophilising the suspension and finally pulverising it to a dust.

The vaccine was administered by holding the animal's head in a glass chamber into which the dust was blown by means of an insufflator.

In mink, seven out of seven developed serum neutralising antibodies as detected in an egg neutralisation test. Fifty per cent. neutralising dose (ND_{50}) titres varied from 1 in 40 to 1 in 1,250. Twelve out of 14 ferrets were immune to challenge with virulent distemper virus. Suitable control animals were used in these experiments. M. B. H.

The Control of Foot-Rot in Sheep. THORNBERRY, H. (1955). *Irish Vet. J.* October. 226–31.

A report of a field trial carried out in Ireland on two flocks of sheep acutely affected with foot-rot. Ten per cent. tincture of chloramphenicol was assessed as a practical method of treatment and proved superior to 50 per cent. formalin, 30 per cent. copper sulphate and a proprietary foot-rot ointment.

One treatment with 10 per cent. chloramphenicol tincture gave 33, 66 and 83 per cent. recovery in severe, moderate and slight cases respectively. Two treatments at a 14-day interval gave 87, 86 and 100 per cent. recovery; 6·7 per cent. of infected feet required three treatments and 2·9 per cent. required four treatments. Few relapses were reported.

The author recommends that weekly treatment with 10 per cent. tincture of chloramphenicol is preferable to fortnightly treatment. He considers that tinctures are preferable to ointments owing to their higher power of penetration, that when lesions are severe and paring extensive the feet should be bandaged after treatment and that routine foot baths are an important method of prophylaxis, curing mild cases and preventing spread of infection. W. B. S.

News and Comment

NEW MEMBERS OF THE R.C.V.S.

The under-mentioned ladies and gentlemen were admitted to membership of the Royal College of Veterinary Surgeons on the date shown against their names:—

AITKEN, John Peter, 11, Kingsburgh Drive, Paisley, Renfrewshire. July 7th, 1956. B.V.M.S. (GLAS.); ALEXANDER, Franz Copeland Murray, 7, Lower Elletson Road, Kingston, Jamaica, B.W.I. June 23rd, 1956. B.A., VET.M.B. (CANTAB.); ALLEN, Michael Mark, Manor House, Ubley, Nr. Bristol. July 4th, 1956. B.V.SC. (BRIS.); ALLEN, Robert, Samuel, Aughaloughan House, Randalstown, Co. Antrim. June 30th, 1956, Dublin; ALLISON, Colin James, Castlehill, Troqueer, Dumfries. July 7th, 1956. B.V.M.S. (GLAS); ANDERSON, Ronald Shand, 34, Lenzie Road, Stepps, Glasgow. July 7th, 1956. B.V.M.S. (GLAS.).

BAILLIE, Alexander Duncan, Bankend, Dunlop, by Kilmarnock, Ayrshire. July 7th, 1956. B.V.M.S. (GLAS); BAILUR, Desappa Manjappa, Kumta, N. Kanara, Bombay, India. June 29th, 1956, Bristol. B.SC.VET. (BOMBAY); BARNES, Thomas, Mortara, Ballylongford, Co. Kerry, Eire. June 30th, 1956, Dublin; BARNETT, Keith Chartres, 7, Newbury Road, St. Annes-on-Sea, Lancs. June 27th, 1956, London; BARRACLOUGH, Alan Brayshaw, 197, Milton Road, Cambridge. July 6th, 1956. B.V.SC. (LIV.); BENNETT, Jean Marjorie (Miss), 33, Byron Road, Selsdon, Surrey. July 4th, 1956. B.V.SC. (BRIS.); BHASKER, Conjeevaram, Govindaraja, c/o Dr. S. M. Natesa Mudaliar, Krishnagiri, Salem Distt., Madras State, India. June 28th, 1956, Edinburgh. B.V.SC. (MADRAS); BLACKMORE, David Killoch, Hambleton Hall Farm, Hambleton, Nr. Oakham, Rutland. June 27th, 1956, London; BLAXLAND, Denis Roy, 7, Springfields, Broxbourne, Herts. June 27th, 1956, London; BOUTFLOWER, John Charles, Langford House, Langford, Nr. Bristol. July 4th, 1956. B.V.SC. (BRIS.); BOYD, James William, The Dairy Farm, Springfield, Chelmsford, Essex. July 4th, 1956. B.V.SC. (BRIS.); BRADSHAW, Philip Reginald, 6, Jellicoe Gardens, Lake Pond West, Cardiff. July 4th, 1956. B.V.SC. (BRIS.); BRAMBELL, Michael Rogers, Y Gwylain, Bangor, Caerns. June 23rd, 1956. B.A., VET.M.B. (CANTAB.); BREMNER, Alan Sherwood, 1, Waterlow Road, Reigate, Surrey. July 7th, 1956. B.V.M.S. (GLAS.); BROWN, David Robert, 23, The Avenue, Loansdean, Morpeth, Northumberland. July 7th, 1956. B.V.M.S. (GLAS.); BRUNTON, Alexander Stewart, 19, Redford Drive, Colinton, Edinburgh. June 28th, 1956, Edinburgh; BRUFORD, James Caisley, 113, Alumhurst Road, Bournemouth West, Hants. June 27th, 1956, London; BUTLER, Barry Chapman, The Cottage, Ram Brewery, Wandsworth High Street, S.W.18. June 27th, 1956, London; BUTLER, Eileen Jean McKay (Miss), 78, Hill Top Avenue, Cheadle Hulme, Cheshire. July 6th, 1956. B.V.SC. (LIV.).

CAMDEN-SMITH, Michael James, 76, Fairway, Durban, Natal, South Africa. June 28th, 1956, Edinburgh. B.SC. (EDIN.), B.SC. (NATAL); CAMERON, Donald Crawford Kennedy, The Tower, Liberton Drive, Edinburgh, 9. June 28th, 1956, Edinburgh; CAMPBELL, Samuel Gordon, 19, Comrie Street, Crieff, Perthshire. July 7th, 1956. B.V.M.S. (GLAS.); CHAPPELL, Larry Alfred, Helenscot, Eridge Road, Crowborough, Sussex. June 27th, 1956, London; CHRISTIE, Geoffrey Clark, Roddinglaw Farm, Currie, Midlothian. July 7th, 1956. B.V.M.S. (GLAS.); CLARK, Noreen Dale (Miss), 11, Spencer Close, Hedon, Hull, Yorks. June 28th, 1956, Edinburgh. B.SC. (EDIN.); CLARK-LEWIS, Anthony Victor, Hillside, Old Shotover Road, Wheatley, Oxon. June 27th, 1956, London; COBB, Leon Moseley, 337, Badminton Road, Winterbourne, Nr. Bristol. July 4th, 1956. B.V.SC. (BRIS.); CODY, Owen Henry, 29, Hyde Park, Dalkey, Co. Dublin. June 30th, 1956, Dublin; COLES, Brian Hugh, 21, Heathbank Avenue, Irby, Heswall, Wirral, Cheshire. July 6th, 1956. B.V.SC. (LIV.); COOK, Wilson Ernest Rhodes, Meadowland, Midford Road, Combe Down, Bath, Somerset. June 27th, 1956, London; COPESTAKE, Peter, Huish Episcopi Vicarage, Langport, Somerset. July 4th, 1956. B.V.SC. (BRIS.); COTTER, William, Ballinvoher, Castletownroche, Co. Cork, Eire. June 30th, 1956, Dublin; COUTTS, Kenneth, 111, Hilton Street, Aberdeen. June 28th, 1956, Edinburgh. B.SC. (EDIN.); CRAIG, Gordon Robertson, 1, Grantley Gardens, Shawlands, Glasgow, S.1. July 7th, 1956. B.V.M.S. (GLAS.); CRIBB, Peter Harold, 27, Glenorchy Road, Sheffield, 7. June 28th, 1956, Edinburgh. B.SC. (EDIN.);

DALTON, Rodger Guy, 241, Wilderspool Causeway, Warrington, Lancs. July 7th, 1956. B.V.M.S. (GLAS.); DALY, Derek James, Malahide Road, Swords, Co. Dublin. June 30th, 1956, Dublin; DAVID, John Samuel Edwards, 3, Waun-Bant Road, Kenfig Hill, Glamorgan. July 4th, 1956. B.V.SC. (BRIS.); D'CRUZ, Samuel, P.O. Chuhari, via Bettiah, Distt. Champaran, Bihar, India. July 7th, 1956. B.V.M.S. (GLAS.), B.SC. (AGRA); DEBOYS, David Carlisle, 13, Swanston Park, Glengormley, Belfast. June 30th, 1956, Dublin; DORAN, Geoffrey Patrick, The Close, Thornbury, Nr. Bristol. July 6th, 1956. B.V.SC. (LIV.); DUCKETT, Mary (Miss), 31, Greenfield Road, Springboig, Lanarks. July 7th, 1956. B.V.M.S. (GLAS.); DUNGWORTH, Donald Lawrence, Callow Farm, Hathersage, Sheffield, Yorks. July 6th, 1956. B.V.SC. (LIV.); DUNWELL, Roy Sutton, West View, Love Lane, Oldswinford, Stourbridge, Worcs. July 6th, 1956. B.V.SC. (LIV.); DYKES, Agnes Brown (Miss), 202, Wedderlea Drive, Cardonald, Glasgow, S.W.2. July 7th, 1956. B.V.M.S. (GLAS), B.SC. (GLAS.).

EASINGWOOD, David Edward, Barclays Bank House, Driffield, E. Yorks. June 28th, 1956, Edinburgh. B.SC. (EDIN.); EDGAR, Robin Keith, 33, Oxford Street, Reading, Berks. June 27th, 1956, London; EDWARDS, Bryan Frederick, 20, Firtree Road, Erdington, Birmingham, 24. July 6th, 1956. B.V.SC. (LIV.); EDWARDS, Brian Llewellyn, 43, Cedarville Gardens, Streatham, London, S.W.16. June 23rd, 1956. B.A., VET.M.B. (CANTAB.); ENNIS, Denise Marie (Miss), 2, Orwell Park, Rathgar, Dublin. June 30th, 1956, Dublin; ETHERIDGE, Michael Frank Nelson, Etherstone, Potley Lane, Hawthorn, Wilts. July 6th, 1956. B.V.SC. (LIV.); EVANS, Derek John, 8, Grange Avenue, Kirby Huxloe, Leicester. July 6th, 1956. B.V.SC. (LIV.); EVANS, John Ailba, 21, Brighton Road, Rathgar, Dublin. June 30th, 1956, Dublin.

FITCHIE, Peter, 79, Alexandra Road, St. Annes-on-Sea, Lancs. July 7th, 1956. B.V.M.S. (GLAS.); FUSSELL, Mark Henry, Meadowsweet, Ampfield, Hants. June 23rd, 1956. B.A., VET.M.B. (CANTAB.).

GALE, Frederick John, Black Barn Cottage, Sandford, Ringwood, Hants. July 4th, 1956. B.V.SC. (BRIS.); GEE, Raymond Edward, 165, Carlton Avenue East, Wembley, Middx. June 27th, 1956, London; GIBBONS, Charles William, Crickmore Farm, White Horse Common, N. Walsham, Norfolk. July 6th, 1956. B.V.SC. (LIV.); GIRLING, Monica Jill (Miss), Flat 18, 27, Bunhill Row, London, E.C.1. June 27th, 1956, London; GOODWIN, Peter John, Mandarah, New Road, Hythe, Southampton. July 4th, 1956. B.V.SC. (BRIS.); GOULD, Alan Clive, 10, Landguard Road, Southampton, Hants. June 23rd, 1956. B.A., VET.M.B. (CANTAB.); GRIFFITHS, Paul Herbert Marshall, 94, Alcester Road, Moseley, Birmingham, 13. June 28th, 1956, Edinburgh. B.SC. (EDIN.); GYI, Ko Ko, 509, Prome Road, Rangoon, Burma. June 28th, 1956. B.SC. (RANGOON).

HANDCOCK, William Joseph, Middlemount House, Rathdowney, Co. Leix, Eire. June 30th, 1956, Dublin; HARKNESS, Michael, 4, Staverton Road, Daventry, Northants. June 28th, 1956, Edinburgh. B.SC. (EDIN.); HASTIE, Hamish, 13, Chesser Gardens, Edinburgh, 11. June 28th, 1956, Edinburgh. B.SC. (EDIN.); HIME, John Malcolm, B House, Marlborough College, Marlborough, Wilts. June

27th, 1956, London; HOLLANDS, John Grahame, 46, Croham Valley Road, South Croydon, Surrey. June 27th, 1956, London; HORNE, Anthony Wyatt, 42, Laurie Crescent, Henleaze, Bristol, 9. July 4th, 1956. B.V.SC. (BRIS.); HOWELLS, Gwilym John, 46, Llwynderi, Penywaun, Aberdare, Glam. June 28th, 1956, Edinburgh; HURLEY, John David, Stag's View, Castletownshend, Skibbereen, Co. Cork, Eire. June 30th, 1956, Dublin; HURLEY, Thomas Joseph, Kilderry, Co. Kilkenny, Eire. June 30th, 1956, Dublin.

IMLAH, Peter, 51, Morningside Park, Edinburgh, 10. June 28th, 1956, Edinburgh; IRFAN, Muhammad, Darul-Ihsan, Street No. 3, Moghal Pura, Pakistan. June 27th, 1956, London. B.V.SC. (PUNJAB); IRONSIDE, James Burnett Ritchie, Rosemount, Braemar Road, Ballater, Aberdeenshire. June 28th, 1956, Edinburgh.

JONES, Alun Smyrna, 6, Glanhwfa Road, Llangefni, Anglesey. July 7th, 1956. B.V.M.S. (GLAS.); JONES, John Hugh, The Haim, Llandrinio, Llanymynech, Montg. June 28th, 1956, Edinburgh. B.SC. (EDIN.).

KENT, Donal Kevin, Ballyhampshire, Castlelyons, Co. Cork, Eire. June 30th, 1956, Dublin; KINGSBERRY, David Langton, Burford Lodge, Elstead, Nr. Godalming, Surrey. June 23rd, 1956. M.A., VET.M.B. (CANTAB.); KOZOROWSKI, Emil Wlodzimierz, 6, Ravenscroft Road, Beckenham, Kent. June 29th, 1956, Glasgow. DR.MED.VET. (BOLOGNA).

LAMONT, Peter Hubert, 27, Stormont Park, Belfast. June 28th, 1956, Edinburgh. B.SC. (EDIN.), LANGMAN, Boyd Alan George, Windle Hey, Adlington, Nr. Macclesfield, Cheshire July 6th, 1956. B.V.SC. (LIV.); LAWRENCE, Brian Thomas, 35, Summerlee Avenue, East Finchley, London, N.2. June 27th, 1956, London; LAWRENCE, John Alexander, P.O. Box 8101, Causeway, Salisbury, S. Rhodesia. June 28th, 1956, Edinburgh. B.SC. (EDIN.); LEE, James Gerard, Clifden, Co. Galway, Eire. June 30th, 1956, Dublin; Leitch, Iain Douglas Cameron Muil, 16, Polwarth Gardens, Glasgow, W.2. June 28th, 1956, Edinburgh. B.SC. (EDIN.); LERICHE, Philip David, P.O. Box 427, Mwanza, Tanganyika. July 7th, 1956. B.V.M.S. (GLAS.); LESTER, Walter Antony, 36, Cotham Road, Bristol, 6. July 4th, 1956. B.V.SC. (BRIS.); LLEWELLYN, Geoffrey Gilbert, Downhead, Southdown Road, Seaford, Sussex. July 4th, 1956. B.V.SC. (BRIS.); LLOYD, Trevor Sidney, Drawell Farm, Cleobury North, Bridgnorth, Salop. July 4th, 1956. B.V.SC. (BRIS.); LOWE, Andrew Donovan, 111, Grant Avenue, Liverpool, 15. July 6th, 1956. B.V.SC. (LIV.).

MACDONALD, Donald Charles, Glenbanchor, Abbotshall Place, Cults, Aberdeenshire. June 28th, 1956, Edinburgh. MCFERRAN, John Brian, 32, Stormont Park, Belfast. June 28th, 1956, Edinburgh. B.SC. (EDIN.); MCHUGH, Thomas Michael, 22, High Street, Evesham, Worcs. June 28th, 1956, Edinburgh. B.SC. (EDIN.); MARTIN, Bernard, 15, Kent Drive, Burnside, Rutherglen, Lanarks. July 7th, 1956. B.V.M.S. (GLAS.); MASON, John Allen, 55, Wimbledon Road, Sherwood, Nottingham. June 27th, 1956, London; MATTHEWS, Robert George, Wilnecote Cottage, Wilnecote, Tamworth, Staffs. June 28th, 1956, Edinburgh. B.SC. (EDIN.); MEHROTRA, Prithvi Nath, Ratan Kund, Mathura, U.P., India. June 27th, 1956, London. B.V.SC. (AGRA.); MILLER, James King, 21, Folly Lane, Caddington, Nr. Luton, Beds. June 28th, 1956, Edinburgh. B.SC. (EDIN.); MILLS, Barry Masterman, Timbercroft, Charlcombe Lane, Lansdown, Bath, Somerset. July 4th, 1956. B.V.SC. (BRIS.); MITTAL, Ved Parkash, Subhashnagar, Dehra Dun, India. June 27th, 1956, London. B.V.SC. (PUNJAB); MOHY-UDDIN, Ghulam, Zaindar Mohallah II Bridge, Srinigar, Kashmir. June 28th, 1956, Edinburgh. B.V.SC. (PUNJAB); MORRISH, John Shirley Henry, Barn End, Cantley, Norfolk. June 28th, 1956, Edinburgh. B.SC. (EDIN.); Moss, Brian, 86, Taylor Hill Road, Lockwood, Huddersfield, Yorks. July 6th, 1956. B.V.SC. (LIV.), MULLEN, Paul Anthony, Carnice, Holmwood Grove, Mill Hill Lane, London, N.W.7. June 27th, 1956, London; MURRAY-BROWN, Ian Francis, Kinnelhook, Lockerbie, Dumfries-shire. July 7th, 1956. B.V.M.S. (GLAS.).

NELSON, Edward Peter, Knowsley Farm, Hoghton, Nr. Preston, Lancs. June 27th, 1956, London; NEWEY, Richard Martin, c/o 24, St. Mary's Road, Stratford-on-Avon, Warwicks. June 27th, 1956, London; NEWTON, Keith, 3, Hazelmere Road, Fulwood, Preston, Lancs. July 7th, 1956. B.V.M.S. (GLAS.); NOLAN, Patrick Joseph, Thomond Hotel, Kilkee, Co. Clare, Eire. June 30th, 1956, Dublin; NOORDIN KELING, Mohamad, Pekan Lama, Kuala Pilah, Negri Sembilan, Malaya. June 27th, 1956, London; NUNNELEY, David, Fairholme, Brinsea Road, Congresbury, Bristol. July 4th, 1956. B.V.SC. (BRIS.).

O'CONNOR, Jeremiah John, Clonadrum, Mullagh, Ennis, Co. Clare, Eire June 30th, 1956, Dublin; OGILVIE, Thomas William Bruce, Beck House, Rawdon, Nr. Leeds, Yorks. June 23rd, 1956. B.A., VET.M.B. (CANTAB.); OKE, Max Anthony, Laurel Cottage, Chillaton, Devon. June 27th, 1956, London. O'NEILL, Thomas John, Toberbunny Lodge, Cloghran, Co. Dublin. June 30th, 1956, Dublin; O'NEILL, William Joseph, 108, Wilfield Road, Ballsbridge, Dublin. June 30th, 1956, Dublin; OWEN, Geoffrey, 21, Newlands Avenue, Bexhill-on-Sea, Sussex. June 27th, 1956, London.

PARKINSON, Kenneth David, High Street, Odiham, Hants. June 27th, 1956, London; PARSONAGE, John Parker, Ford Hall, Ford, Nr. Shrewsbury. July 7th, 1956. B.V.M.S. (GLAS.); PATEL, Jayarambhai Fulabhai, Samadi Chakla, Nadiad, Distt. Kaira, Gujarat, India. June 29th, 1956, Glasgow. B.SC.VET. (BOMBAY); PAYNE, Laurence Noel, 7, Holley Crescent, Headington, Oxford. July 4th, 1956. B.V.SC. (BRIS.); PENMAN, Gordon, 28, Stannington Avenue, Heaton, Newcastle-on-Tyne. June 28th, 1956, Edinburgh. B.SC. (EDIN.); PEPPER, Thomas Anthony. The Birches, Hugglescote, Coalville, Leicester. July 7th, 1956. B.V.M.S. (GLAS.); POLAND, Jennifer (Miss), Fairoaks, Shirley Holmes, Lymington, Hants. July 4th, 1956. B.V.SC. (BRIS.); PRASAD, Awadh Kishore, Vill. Charain, P.O. Chattupur, Distt. Palaman, Bihar, India. June 27th, 1956, London. B.SC. AGRIC. (PATNA); PRATT, David Angus, Beaufort, Drum Road, Keith, Banffshire. June 28th, 1956, Edinburgh. B.SC. (EDIN.).

RANGER, Michael John, Susan's Court, Langton Matravers, Swanage, Dorset. June 27th, 1956, London; RATCLIFFE, James, 29, Church Street, Farnworth, Nr. Bolton, Lancs. July 7th, 1956. B.V.M.S. (GLAS.); RAY, Dipak Kumar, 27, Linton Street, Calcutta, 14, India. July 6th, 1956. B.V.SC. (BRIS.); REED, Hugh Charles Brent, Staple Vale, Torrington, N. Devon. July 4th, 1956. B.V.SC. (BRIS.); RICHARDS, Benjamin Gurupathy, 78, Gombak Road, Kuala Lumpur, Malaya. June 28th, 1956, Edinburgh. B.V.SC. (PUNJAB); ROBERTS, Robert Gordon, 5, Dampier Street, Leek, Staffs. July 6th, 1956. B.V.SC. (LIV.); ROWLAND, Alan Corbett, 32A, Thornfield Grove, Linthorpe, Middlesbrough, Yorks. June 28th, 1956, Edinburgh. B.SC. (EDIN.); ROWLAND, James, 15, Barnton Gardens, Edinburgh, 4. June 28th. 1956, Edinburgh. B.SC. (EDIN.); RYAN, Michael Ailbe, Foilachy, Cappawhite, Co. Tipperary, Eire. June 30th, 1956, Dublin.

SCHWARZ, Gordon, 25, Heneage Road, Grimsby, Lincs. July 6th, 1956. B.V.SC. (LIV.); SEDGWICK, John Richard White, Beech Grove, Belle Vue, Cockermouth, Cumberland. June 28th, 1956, Edinburgh. B.SC. (EDIN.); SHARP, Norman Churchill Craig, 8, Ormonde Drive, Glasgow, S.4. July 7th, 1956. B.V.M.S. (GLAS.); SHEPHERD, Michael James William, c/o Cruxwell House, Bromyard, Hereford. July 6th, 1956. B.V.SC. (LIV.); SHIRES, Richard Mathieson, Sunninghill, Almondbury, Huddersfield, Yorks. June 28th, 1956, Edinburgh. B.SC. (EDIN.); SIMS, Frank William, 12, Shrewbridge Road, Nantwich, Cheshire. July 6th, 1956. B.V.SC. (LIV.); SINCLAIR, James Donald, 222, Talla Road, Hillington, Glasgow, S.W.2. July 7th, 1956. B.V.M.S. (GLAS.); SINGLETON, Thomas Edmund, Holmes Farm, Brindle, Nr. Chorley, Lancs. July 6th, 1956. B.V.SC. (BRIS.); SMITH, Robert Hugh Alexander, 26, Woodfield Road, Ayr. July 7th, 1956. B.V.M.S. (GLAS.); SMITH, Thomas Stark, 14, Thane Road, Glasgow, W.3. July 7th, 1956. B.V.M.S. (GLAS.); STEPHENS, Meyrick Baggott, 123, Barnards Green, Malvern, Worcs. June 28th, 1956, Edinburgh. B.SC. (EDIN.); STEVENS, Humphrey Rowe, Mills' Farm, Redisham, Beccles, Suffolk. June 27th, 1956, London; STEVENSON, Donald Edward, 21, River Mount,

Walton-on-Thames, Surrey. July 6th, 1956. B.V.SC. (LIV.), B.SC.PHYSIOL. (LIV.); STONE, Michael William, The Cornish Arms Hotel, St. Tudy, Nr. Bodmin, Cornwall. June 28th, 1956, Edinburgh. B.SC. (EDIN.); STRUTHERS, Edith Anne (Miss), 35A, St. Martin's Street, London, W.C.2. July 6th, 1956. B.V.SC. (LIV.); STUART, James Clifford, Grapes Hotel, St. Michaels, Preston, Lancs. July 6th, 1956. B.V.SC. (LIV.); SUTHERLAND, James Sinclair, 8, Riverbank Crescent, Conon Bridge, Ross-shire. July 7th, 1956. B.V.M.S. (GLAS.); SUTHERLAND, Roderick, 25, Houston Street, Hamilton, Lanarks. July 7th, 1956. B.V.M.S. (GLAS.).

TAYLOR, Chhotalal Mangaldas, 76, Nanubhai Desai Road, Bombay, 4, India. June 29th, 1956, Glasgow. B.SC.VET. (BOMBAY); TAYLOR, David Conrad, 135, Edmund Street, Rochdale, Lancs. July 7th, 1956. B.V.M.S. (GLAS.); TAYLOR, John Neville, The Vicarage, Foston-on-the-Wolds, Driffield, E. Yorks. July 7th, 1956. B.V.M.S. (GLAS.); TEALE, Michael Leslie, Abbots Hill, Moor Park, Farnham, Surrey. June 27th, 1956, London. TEEVAN, Richard John, 3, Eglinton Road, Donnybrook, Dublin. June 30th, 1956, Dublin; TERLECKI, Stanislaw, 56, Lawrie Park Road, London, S.E.26. June 27th, 1956, London. DR.MED.VET. (BOLOGNA); THOMAS, Michael Edward Randolph, 8, Waterloo Street, Freetown, Sierra Leone, B.W. Africa. June 28th, 1956, Edinburgh. D.V.M. (TUSKAGEE); THORP, André Cecil Burford, 2, Colosseum Terrace, Albany Street, London, N.W.1. June 27th, 1956, London; TODD, Robert Henry, Lower Llanach Farm, Crumlin, Mon. June 28th, 1956, Edinburgh. B.SC. (EDIN.); TORDOFF, David Bertram, 8, Bare Avenue, Morecambe, Lancs. June 28th, 1956, Edinburgh. B.SC. (EDIN.).

WALTON, Grahame Stenson, 14, The Crescent, Davenport, Stockport, Cheshire. July 4th, 1956. B.V.SC. (BRIS.); WARD, Richard Keith, 86, Bramhall Lane South, Bramhall, Cheshire. July 6th, 1956. B.V.SC. (LIV.); WARNOCK, James Pinkerton, 22 Clarence Road South, Weston-super-Mare, Somerset. July 7th, 1956. B.V.M.S. (GLAS.); WASTIE, Pamela Charmbury (Miss), Whitehall Court, Telford Road, Edinburgh, 4. June 28th, 1956, Edinburgh. B.SC. (EDIN.); WATSON, Dinah Cochrane (Miss), Kelsale Mill, Saxmundham, Suffolk. July 4th, 1956. B.V.SC. (BRIS.); WATSON, Frank Ickringill, 4, George IV Street, Cambridge. June 23rd, 1956. M.A., VET.M.B. (CANTAB.); WATSON, Stuart Noel, 11, Edge Avenue, Grimsby, Lincs. July 6th, 1956. B.V.SC. (LIV.); WHITMORE, Michael Mervyn, 22, Towers Road, Hatch End, Middx. June 28th, 1956. B.SC. (EDIN.); WILSON, David James, Damhead, Coleraine, Co. Derry. June 30th, 1956, Dublin; WILSON, George Alexander, Ranelly House, Omagh, Co. Tyrone. June 28th, 1956, Edinburgh. B.SC. (EDIN.) WILSON, George Petrie Hay, 2, Rosslyn Terrace, Glasgow, W.2. July 7th, 1956. B.V.M.S. (GLAS.); WILSON, Harry Cowan, Kingask House, Cupar-Fife. July 7th, 1956. B.V.M.S. (GLAS.); WILSON, Humphrey Rolls, Hospital House, Alford, Aberdeenshire. June 28th, 1956, Edinburgh; WOOD, David Reoch, 15, Baird Hill, East Kilbride, Lanarks. July 7th, 1956. B.V.M.S. (GLAS.); WOOD, Edward Nigel, 50, Sutherland Drive, Newcastle, Staffs. June 23rd, 1956. B.A., VET.M.B. (CANTAB.).

YATES, Robert Newman, 51, Kennedy Drive, Airdrie, Lanarks. July 7th, 1956. B.V.M.S. (GLAS.).

UNIVERSITY NEWS

Cambridge

The following passed the Second (Final) Part of the Veterinary Examination and graduated as Bachelors of Veterinary Medicine (Vet.M.B.), being thereafter admitted to membership of the Royal College of Veterinary Surgeons:—

Mr. F. C. M. Alexander, B.A. (Caius College); Mr. M. R. Brambell, B.A. (Christ's College); Mr. B. L. Edwards, B.A. (Caius College); Mr. M. H. Fussell, B.A. (Sidney Sussex College); Mr. A. C. Gould, B.A. (Trinity Hall); Mr. D. L. Kingsberry, M.A. (Magdalene College); Mr. T. W. B. Ogilvie, B.A. (Trinity Hall); Mr. F. I. Watson, M.A. (Trinity College), and Mr. E. N. Wood, B.A. (Emmanuel College).

INTER-AFRICAN ADVISORY COMMITTEE FOR EPIZOOTIC DISEASES

The third Annual Meeting, under the chairmanship of Mr. R. S. Marshall, C.B.E., Veterinary Adviser to the U.K. Colonial Office, was held in Pretoria from July 2nd to 4th. Veterinary representatives from each of the six member countries of the Commission, namely Belgium, France, Federation of Rhodesia and Nyasaland, Portugal, Union of South Africa, and the U.K. were present. Technical reports were received on the following subjects:—

Murine adapted strains of *Asterococcus mycoides* in the immunisation of cattle against bovine pleuropneumonia, by Dr. Gerlach of Angola; a quantitative complement fixation test for contagious bovine pleuropneumonia, by Mr. R. C. Newing of Kenya; recent advances in rinderpest vaccine research, by Dr. S. E. Piercy of Kenya; a review of the bovine theilerioses, by Dr. W. O. Neitz, Union of South Africa; prophylaxis against rabies in Southern Africa, by Dr. D. A. Lawrence, Federation of Rhodesia and Nyasaland.

Further consideration was given to inter-territorial projects including rinderpest survey of wildlife, a statistical survey of clinical and laboratory data in rabies, regulations for the exchange of virulent material, and the establishment of regional committees on epizootic diseases.

It was resolved that an international convention for the control of rinderpest be drafted, and a specialist meeting of experts on laboratory techniques in contagious bovine pleuropneumonia be convened.

The technical reports for the 1957 meeting will fall under the title of Important Virus Diseases of Animals transmitted by Arthropoda. An invitation to hold the fourth annual meeting at Dakar was received from the French Government, and Dr. D. A. Lawrence, Director of Veterinary Services, Southern Rhodesia, was elected Chairman for 1956/57.

AUGUST BANK HOLIDAY

We are asked to make it known that the Royal College of Veterinary Surgeons, together with the College library will be closed from 2 p.m. on Friday, August 3rd, to 10.30 a.m. on Tuesday, August 7th.

IN PARLIAMENT

National Stud (Report)

MR. J. J. ASTOR (July 19th) asked the Minister of Agriculture, Fisheries and Food whether he is now in a position to make a statement on the Report of the Committee on National Stud Policy and Methods of Operation.

MR. AMORY: Yes, Sir. I am in general agreement with the objectives which the Committee's recommendations are designed to achieve. The permanent implementation however of the policy of standing at the Stud a stallion of the very highest class must depend on future financial circumstances. In the shorter term, however, I am enabled to put this policy into effect thanks to Mr. Clark's generous gift to the

National Stud of the stallion, Never Say Die. I am in broad agreement with the Committee's recommendations on mares, but as the Stud must continue to be self-supporting, it will continue to breed some yearlings for sale as an additional source of revenue. As recommended by the Committee, I propose to appoint a standing committee to advise on the acquisition and disposal of bloodstock.

MR. T. WILLIAMS: May I ask the Minister whether, in view of this exceedingly generous gift from an American, any British breeder has felt like being equally generous and making a present of a stallion to the National Stud?

MR. AMORY: I am interested in the right hon. Gentleman's Question because I am glad to say that Sir Victor Sassoon has offered to the National Stud his colt, Elopement. I have accepted the offer with great gratitude, and I am hoping that Elopement will stand at the stud from the 1957 season onwards.

Meat (Inspection)

CAPTAIN CORFIELD (July 19th) asked the Minister of Agriculture, Fisheries and Food what proportion of meat intended for human consumption is not subject to inspection in England and Wales at the present time.

MR. AMORY: All meat intended for sale for human consumption is liable to inspection. Meat from animals killed by farmers and domestic pig keepers for their own family use is not, but this is a very small proportion of the total.

CAPTAIN CORFIELD: Can my right hon. Friend say what proportion of the meat is inspected by veterinary surgeons fully qualified for the job?

MR. AMORY: No, I am afraid I cannot give my hon. and gallant Friend that information; nor can I tell him what proportion is, in fact, inspected.

VETERINARIAN TO ADDRESS HOMOEOPATHIC LEAGUE

For what is believed to be the first time in its history a veterinary surgeon, Major R. C. G. Hancock, is to read a paper at the quinquennial Congress of the International Homoeopathic League. Major Hancock's paper, which he will read on Thursday next, will be entitled "Homoeopathy and the Animal." The Congress is being held all next week at the Royal Society of Medicine. A Belgian veterinarian is presenting a paper also, *Le Besoin actuel et mondial de l'homoeopathie*.

SHIPLEY CUP BOWLS TOURNAMENT

The Annual Bowls Tournament of the Eastern Counties Veterinary Society for the Shipley Cup was held on July 20th at Cambridge on the Magdalene College Grounds. In the final, Mr. S. F. J. Hodgman, Newmarket, beat the holder, Mr. P. S. Bligh.

GOLF AND BOWLS AT THE CONGRESS

It is hoped to hold competitions for the Men's Trophy and the Ladies' Cup on Thursday afternoon, September 20th. Those wishing to enter are asked to notify Mr. R. W. J. Knight, 40, Hertford Place, Coventry.

Anyone who wishes to play bowls on the same afternoon, should advise Mr. G. G. McLaren, 47, Tuffley Avenue, Gloucester, who has offered to run a Bowls Competition if enough entries are received.

PERSONAL

Births

ASPINALL.—On July 10th, 1956, to Mary, wife of Kenneth W. Aspinall, M.R.C.V.S., of the Veterinary Department, Zomba, Nyasaland, a sister for Peter and Richard, Edith Jeannie.

BARNSLEY.—On July 20th, 1956, to Molly, wife of D. G. C. Barnsley, M.R.C.V.S., of 5, Trinity Street, Bungay, Suffolk, a son, Derek Michael.

MILLER.—On July 14th, at the E.I.M.H., Edinburgh, to Jean (*née* Greig) and Alexander M. H. Miller, a son, David McKay, a brother for Alexander.

R.C.V.S. OBITUARY

We record with regret the deaths of the following members of the profession:—

FERGUSON, John Drummond, of Craigforth, Crieff, Perth. Qualified at Glasgow in 1921; died July 22nd.

PROBYN, Frederick Stewart, Clipton, Ascerton Road, Sidmouth, Devon, Major late R.A.V.C. Graduated December 14th, 1899, London. Died July 13th, 1956.

COMING EVENTS

September

16th to 22nd (Sun. to Sat.). 74th B.V.A. Annual Congress at Royal Leamington Spa.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Fowl Pest

Essex. 576, Rayleigh Road, Hutton, Brentwood, Essex (July 14); Lynn Regis, Lodge Lane, Collier Row, Romford (July 18).

Lancs. Fairview Farm, Adlington, Chorley; Old Hall Lane, Charnock Richard, Chorley (July 13); Lawrence Lane, Eccleston, Chorley (July 17); Four Lane Ends Farm, Charnock Richard, Chorley (July 18); Poultry Farm, Wigan Lane, Duxbury, Chorley (July 19).

Lincs. Chapel Lane, Anwick, Sleaford, Lincs; 64, Sleaford Road, Heckington, Sleaford (July 13); Sherborne, Main Road, Leverton, Boston (July 14); Manor Farm, Ruskington, Sleaford (July 16); Lord Nelson Inn, Anwick, Sleaford; The Shop, Anwick, Sleaford; Main Street, Anwick, Sleaford; 2 Area House, Anwick, Sleaford; 12 & 24, Church Street, Heckington, Sleaford (July 17); Butts Hill, Poultry Farm, New Road, Heckington, Sleaford (July 18).

Swine Fever

Berks. Hogwood Farm, Finchampstead, Wokingham (July 17).

Bucks. Upper Farm, Upton, Dinton Aylesbury (July 19).

Essex. "Veronica," Lower Avenue, Dunton, Brentwood (July 17); 634, Rayleigh Road, Hutton (July 19); Mayfields Farm, Mayes Lane, Sandon Chelmsford; The Cottage, Church End, Lindsell, Dunmow (July 23).

Herts. Church Lane Piggeries, Rickmansworth (July 17); Shenley Hill Farm, Shenley, St. Albans (July 19).

Lincs. New House, Frampton Roads, Boston (July 16); The Parks, Frampton, Boston; Woodhill Farm, Legsby Road, Market Rasen (July 23).

Norfolk. Kensington House, Wroe Road, Emneth, Wisbech (July 17); Waterloo Farm, Hindringham, Fakenham (July 19).

Shropshire. Santley Farm, Minsterley, Shrewsbury (July 17); Church Farm, Preston Gubbals, Shrewsbury (July 19).
Sussex. Old Brickyard, Copse Road, Haslemere (July 19); Captains Farm, Streat, Lewes (July 23).
Warwicks. Poplars Farm, Forshaw Heath, Earlswood. Birmingham (July 23).
Worcs. Lower Blackstone Farm, Bewdley (July 19).
Yorks. Well Hall Farm, Wel, Bedale (July 19); Taylor Hall Lane Piggeries, Mirfield (July 20); Grange Farm, Wales, Sheffield (July 23).

Anthrax

Ches. Wheelock Farm, Mill Lane, Wheelock, Sandbach (July 17).
Derby. Top Farm, Longnor, Buxton (July 13).
Devon. Lower Goosewell Farm, Plymstock, Plymouth (July 16).
Lancs. Lane House Farm, Liverpool Road, Much Hoole, Preston (July 17).
Leics. Stone House Farm, Packington, Ashby de la Zouch (July 19).
Shropshire. Green Farm, Longnor, Shrewsbury (July 19).
Somerset. Lower Whipcott Farm, Holcombe Rogus, Wellington (July 19).
Staffs. Powkhall Farm, Claverley, Wolverhampton (July 16).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Scottie Cramp

Sir,—Miss Joshua's article on the above subject in your issue of June 30th prompts me to record my comments for two reasons: first that I am very familiar with this condition, and secondly that I have been so interested in vitamin E during the past few years.

Scottie Cramp first appeared in Dublin to my knowledge in the early 1930's after the importation from Scotland of a certain stud dog. Many of the progeny of this dog showed symptoms of this condition in some degree, one of the severe chronic forms being my own particular pet. The condition became very common for some years and then started to decline. I have seen only four cases in the last year. I cannot recall the circumstances which led to my first diagnosing this condition, but I think it was a reference to the subject in the columns of THE VETERINARY RECORD. There was a further reference to this condition in THE VETERINARY RECORD by Lucy Robinson in 1943, as mentioned in Hamilton Kirk's *Index of Diagnosis*.

Miss Joshua has described the symptoms and exciting causes, but has omitted to mention lactation as one of these causes. In the lactating bitch, in spite of calcium and other therapy, the symptoms persist, but will abate immediately parathyroid extract is administered. The symptoms can arise at four to six months old, or can be delayed until some condition lowers the animal's resistance. In some bitches the primary symptoms have appeared following first heat or first pregnancy.

The symptoms in all cases of Scottie Cramp may be alleviated rapidly by the administration of parathyroid extract in doses from 1/20th up to 1/5th grain per day, so we have always referred to this disease as "parathyroid disease of Scotties." One can expect a complete and permanent cure in a large percentage of these cases from a course of parathyroid extract, gradually tapering the dose.

It is significant that last January, in a chronic case, I decided to try vitamin E in combination with parathyroid. The dog had been having courses of parathyroid extract over the past two years with good results, but the symptoms kept recurring shortly after each course ceased. Initially, parathyroid extract 1/20th grain was given with vitamin E in the form of alpha tocopherol succinate 50 I.U. three times daily. After 10 days the owner reported that the dog was in excellent form, so the vitamin E was reduced to 50 I.U. twice daily and the parathyroid stopped. Fourteen days later the vitamin E was reduced to 50 I.U. daily for two months and then 50 I.U. twice a week. The dog is now in perfect health and has had no recurrence of cramp.

This is the only case I have tried on vitamin E, but it does appear to confirm the result obtained by Miss Joshua.

Yours faithfully,
N. H. LAMBERT.

South Richmond Street,
Dublin,
Eire.

July 10th, 1956.

Use of Transfixion Screws in Fracture Fixation

Sir,—I am very grateful for Mr. Lawson's kind references in his letter concerning my recent article on the use of transfixion screws in fracture fixation. My experience with the Rush pin, unfortunately, is too limited to allow my making any comment; but there is a point to be remembered in connexion with Mr. Lawson's recommendation of "olecranon" screws. The advantage of such screws in not requiring oversize drilling of one fragment is, in my opinion, greatly outweighed by the fact that the hole drilled does not remain oversize for long. Thus a threaded surface to the screw shaft adjoining the head soon makes a much better contribution to fixation than if the surface were smooth.

Yours faithfully,
GORDON C. KNIGHT.

Royal Veterinary College and Hospital,
Royal College Street,
London, N.W.1.

July 21st, 1956.

Owing to lack of space several interesting letters have been held over until next week.

ADVERTISER'S ANNOUNCEMENT

BAYER PRODUCTS LTD., and its associated exporting company, Winthrop Products Ltd., announce the construction of a new factory near Newcastle-on-Tyne, at which manufacturing facilities will be concentrated. The administrative and other offices of Bayer Products Ltd. and Winthrop Products Ltd. will remain at Neville House, Kingston-on-Thames, Surrey, and the Biological Institute will remain at Exning, Newmarket.